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INTERNATIONAL EDUCATION SERIES

THE
SECONDARY SCHOOL SYSTEM
OF GERMANY

BY

FREDERICK E. BOLTON, M.S., PH. D.

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EDITOR'S PREFACE.

UNTIL recently there has been no adequate account in the English language of the secondary schools in Germany. There have been, it is true, many articles in magazines which quoted single programmes and courses of study, but there has been no general survey of the subject, and, above all, no study of the origin and progressive growth of the system.

Only through a study of its origin and its development does one become able to understand the present condition of a system of education, and to predict with some degree of accuracy its future trend.

It is unscientific, not to say idle and unprofitable, to summon before us an existing system and attempt to pass judgment on it without first investigating its genesis and learning the function that it fills.

Even a comparison of one system with another contemporary system does not go very far to enlighten us on the question of improving our own system; for we must first recognise the social necessity that has called an institution into being before we can

discern its present shortcomings, and before we can judge of the merits of what is offered as a substitute for it.

The new method of science which has come into vogue during the past forty years is slowly taking possession of all fields of inquiry. It has to some extent penetrated that of education. It is no longer possible for a first-class scientific man to write a book that arraigns the entire educational system of the age without any attempt to study its beginnings and growth, and without bestowing so much as a thought on the function which it has filled in forming the civilization of the present. Successful studies on organic growth deal sympathetically with the embryology of a living being, and lavish time and patience on the observation of the crude forms that ushered in the era of organic life on the planet. So, too, must the new literature of pedagogy take on the scientific spirit, and, emulating the methods of the biologist, give its attention to the first steps of education and the subsequent adaptation of a course of study to the social need.

Civilization is the key word in the study of the history of pedagogy. What has been the ideal of civilization, and what have been the means to initiate the new human being, the child, into a participation in its benefits? How has the individual in youth been made to adopt such habits of life as to fit him to help his fellow-men and make him at the same time receptive of help from them?

In the history of school education we note continually a struggle between one-sided reformers and

devotees of a blind conservatism. The former desire to substitute new branches of learning or new methods of instruction for those in vogue, without carefully weighing their educational value. They adduce superficial grounds for adoption of the new, and equally superficial objections against the old. The blind conservatives feel the importance of the old, and are not convinced of the necessity of change. The two parties are to be brought into harmony only by a scientific study which shall enumerate one by one the educational values of the conflicting methods and courses of study. These educational values are to be found in two lines: A study may be valuable as giving man power over Nature in time and space, as mathematics, physics, chemistry, botany, geology, etc., or it may be valuable as giving an insight into human nature, thus making closer the union of man and man, so that the social whole may help each member of it to better advantage to help himself. Thus the study of language, history, philosophy, and, above all, of literature, is a direct means of promoting civilization.

The solidarity of the present with the past is above all essential, and must be provided for at all hazards; otherwise we should always have revolution instead of reform, and never any real progress. Here is the secret of the educational value of the classics. The Chinese study Confucius and Mencius, and thereby learn to understand much better their close-fitting etiquette as their spiritual garment of use and wont. The young Brahman sees in the Veda which he learns to read the active causes that

produced and maintain his caste system. So the Koran initiates the Mohammedan child, just as the study of the second book of Homer's Iliad did the Greek child, into the nature of the social whole in which he finds himself.

Latin and Greek as studies in the secondary schools initiate the youth of modern European civilization wherever it is found, whether in the Old World or in the New, into the spirit of the Greeks and Romans who furnished two essential threads to that civilization, namely, the laws, forms of judicial procedure, and the forms of ownership and transfer of property—all these being forms of the social will, and chiefly Latin in their origin. On the other hand, the Greeks furnished the forms of art, literature, science, and philosophy, the intellectual side of our civilization. It does not require much reflection to see the educational value of some years' study of Greek and Latin to the European youth to build up in his mind an apperceptive mass of concepts that enable him to recognise the origin and significance of the laws and forms of civil combination which make possible the social whole in which he lives; or, on the other hand, to recognise what is derivative in his art and literature and science.

These useful things could not be taught scientifically and philosophically to youth of tender age; but they are taught more effectually by an educative process lasting over several years' study of the classic languages—a process that gradually imbues the mind with the classic spirit. The effect is to build up a new consciousness supplementary to the natural

one received by the child in infancy and childhood, in his home and social life. He adds to himself a new life that is a shadowy reproduction of the life of the peoples that created the elements of his civilization for him. The consequence is that he goes forth from high school and college with a double childhood experience, the one modern, the other ancient, the latter a sort of key or clew to the other; the one an organic life of to-day, the other an embryonic life that explains the former. The study of the classics of a civilization brings about a second birth, namely, into the world of producing causes of one's civilization. All who get this higher education have had this new birth, although they are rarely conscious of the rationale of the process.

Language is a revelation of human nature different from that of history. The latter reveals individual collisions against the social whole and the collisions of one whole (a nation) against others (nations). But language shows directly the degree in which the people have realized individual freedom. The development of the independent functions of the parts of speech shows the advancement of the Indo-European and Semitic stages of consciousness as compared with Chinese and Turanic consciousness, which uses a language wherein the parts of speech have not yet differentiated and become independent. To acquire a familiarity with a language is in some measure to learn to think in it, and to look at the world after the manner of the people who made the language.

Even the English method of spelling, which preserves the rights of each word to its own alphabetical

dress without much restraint from analogy or from phonic laws, is a very close symbol of the Anglo-Saxon and Norman constitution of England, wherein ancient compromises have become modern rights and privileges. For local self-government arose from compromises between social power in the government and individual stubbornness of resistance.

It is evident that the study of Latin by the southern nations of Europe is not of the same educational value as that by the northern nations. The latter have a Teutonic basis to their language, while the former have a Roman basis. All southern Europeans should study English or German, and thereby add to their natural consciousness that of the northern nations, and through this enable them to understand readily the motives of action and the aspirations of their powerful neighbours.

Is it not a blind, unconscious conviction in the Teutonic mind that causes his conservatism in the contest over the real-schools and the gymnasia—matters faithfully recorded by Professor Bolton in this book—the struggle against the substitution of the so-called “moderns” (science, history, and modern literature) for the traditional classic course? A conservative may be excused for shuddering at a change that he thinks would deprive the coming generation of the power to see the past in the present—a power that he feels in himself to apperceive the Greek and Roman contingents in modern civilization. It appears to him like a proposition to dispense with the second birth, a birth into a consciousness of his heritage of the past.

Very many problems in German secondary instruction are common to American, but their solutions have not been the same. It has been our general practice to take up algebra before geometry, but after quadratic equations to begin and complete plane geometry. The Germans begin with geometry and follow with algebra. On account of the close relation of algebra to arithmetic the American will justify himself, it is likely, in continuing his old practice, although some schools here are trying the German plan.

Too much has been attempted in arithmetic and its applications before beginning algebra. There has been a constant tendency to produce arrested development on the mechanical stage of arithmetical calculation, and thus retard the pupil's progress into higher mathematics. A few weeks' study of algebra gives the pupil a surprising advantage over his fellow who has studied arithmetic only. He can now make rules for himself, and does not need to remember those of his book.

What is said of the German practice of studying science without laboratories should lead to a careful investigation of the question whether there is not a preliminary stage of science—say for children and youth under sixteen years of age—in which the laboratory method is not so serviceable as the former method of teaching. There can, of course, be no doubt of the superiority of the laboratory method in the college and the university.

The question, "What is complete living?" is a very pertinent one in the face of the dictum which asserts that the true object of education is to pre-

pare people for complete living. Such complete living involves the two factors named above: (1) such a knowledge of Nature as enables one to conquer it for human ends and purposes; (2) the knowledge of human nature that enables each to combine helpfully with the social whole. The educated individual should be able to avail himself of all human experience.

I must not close this preface without speaking of the abuse of classic study. The study of Latin for an average of seven hours a week for nine years (aside from the study in the preparation of the lesson) would seem to be more than is necessary to create in the mind the desirable apperception basis spoken of above. All that is in addition to the proper amount, it must be remembered, goes to arrest the development of the mind on a lower stage of development. One often finds in English and French universities, and occasionally here in America, scholars who have taken honours for their classical preparation (especially in Latin or Greek prosody) who seem to have lost their interest in the modern world. They have alienated themselves from the present and can not now return to it and grapple with its problems. This is the *reductio ad absurdum* of scholarship; for the object of the school is to fit for complete living in the sense of conquering Nature and combining with one's fellow-men. The study of the past is a means for understanding the present, and not for adopting the past as a substitute for the present.

W. T. HARRIS.

WASHINGTON, December 1, 1899.

AUTHOR'S PREFACE.

AT no time in the history of our country has the science of education been so zealously studied as during the last few years. The subject has been considered from innumerable points of view. But we have many features to work out more systematically than has yet been done. Much is still to be learned from a comparative, critical study of educational systems in foreign countries. It has been said that "Germany is the schoolmistress of the world"; and all will welcome any contribution to the existing knowledge concerning the educational status of a country so influential in shaping the world's thought.

It was with pleasure that I availed myself of the opportunity while in Germany to personally visit and study the different forms of schools comprised in the educational system. I witnessed recitations in all branches of instruction in all grades from the kindergarten to the university, and hence gained a

fairly adequate personal acquaintance with organization and methods of instruction. In addition to this I sought every opportunity for conference with schoolmen, teachers and directors, to better acquaint myself with the *motif* inspiring the various features of the system. An endeavour was also made to study the family life, to gain a knowledge of the relations between patrons and the school system. I have attempted in the following pages to describe one section of the system, viz., the secondary schools. An attempt has been made to explain the essential features of the organization, government, and *modus operandi* of the schools.

An important feature of the book, and one which ought to prove helpful by comparison with the status in our own country, is the consideration of the qualifications, training, and examination of teachers. Courses of study have received considerable attention. Although these are but a means to an end, yet they are in no small degree determinative of the end. We have by no means solved the question concerning the subject-matter and division of our school curricula, and any precedents established by a country like Germany should receive careful investigation.

Many valuable contributions have been made from time to time upon various phases of the Ger-

man schools, especially by the United States Bureau of Education, but no one has heretofore brought together any comprehensive treatment of the secondary school system.* From the many expressions of students and educators with whom this work has been discussed while in preparation, I am led to believe that it will fill a real want. My greatest desire is that, though necessarily imperfect, it may contribute something to the betterment of the conditions of education in our own domain.

I am under great obligation to my friend Dr. Alexander Bennewitz, of the Girls' High School at Leipzig, for many valuable suggestions, for the interpretation of data obscure in meaning to a foreigner, and for many important facts which would have been inaccessible but for his kindly assistance. To the many school officials, the librarians at the Comenius Stiftung and the Leipsic University Library, and others too numerous to mention individually, I desire in this public way to express my gratitude for the many courtesies extended me.

The hearty co-operation of my wife throughout the entire prosecution of the work has not only rendered the book possible, but has enabled me to place the results before the public much sooner

* Dr. Russell's German Higher Schools appeared since this was written.

than I otherwise could have done. My brother, Dr. Herbert E. Bolton, has read the entire work in manuscript, and his numerous suggestions on arrangement have made it of increased value. To Dr. G. Stanley Hall and Dr. William H. Burnham I am indebted for kindly sympathy and substantial aid while the work was maturing. For the treatise as a whole I alone am responsible.

It is with pleasure I mention that every contributor to this series, as well as the educational public, owe a lasting debt of gratitude to the general editor, Hon. William T. Harris, LL. D., for his careful personal attention to every volume while it is passing through the press.

F. E. B.

STATE NORMAL SCHOOL, MILWAUKEE, WIS.,
September, 1899.

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THE SECONDARY SCHOOL SYSTEM OF GERMANY.

CHAPTER I.

ORGANIZATION AND MANAGEMENT.

1. INTRODUCTORY.—DIFFERENTIATION OF GERMAN SCHOOLS.

THE secondary schools of Germany do not form, as in America, a second block in a tripartite pyramidal system of primary, secondary, and higher education. In a certain significant sense the German secondary schools form a system by themselves, or, more strictly speaking, they comprise several distinct systems, each having a special end in view. The first in rank of these are the humanistic gymnasias (*humanistische Gymnasien*). With their courses steeped in classic lore, they have for their special aim the preparation of students for the university. They articulate poorly with the people's schools (*Volksschulen*), and, unless the transition from the people's schools to the gymnasias is made early, it is impossible for boys trained in the former to enter the latter. The teachers in the gymnasias strongly urge that the pupils coming to them be prepared in their own preparatory schools (the *Vorschulen*),

rather than in the people's schools. The characteristic feature of the gymnasia is the classical basis of their curricula. A broad line of demarcation separates them from a second class, the so-called real-schools (*Realschulen*). The latter have in view the fitting of students for business vocations, or for subsequent study in various technical higher institutions. A compromise between the two, which is a product of later development, and which receives much favour from certain classes, is the Real-gymnasium. This school, although having less classical instruction than the gymnasium, like it, has little direct connection with the primary education offered in the people's schools. It, too, prefers, and virtually demands for entrance, special preparation and an early transition from the people's schools if loss of time is not to ensue. The boys who are predestined by their parents to pursue higher studies must begin them at an early age—say at ten or eleven years.* When a course of life is mapped out and entered upon, the Germans assume that it will be pursued to the end; there is no readjustment of ill-planned and wrongly selected paths of labour; no grafting of a new branch upon an old stock with the expectation of abundant and desirable fruit. With them there are many distinct classes of society and business, and they cannot believe that preparation in one direction may at the same time serve as preparation in another. Although "all roads lead to Rome," their view is that only one leads to the

* Report of the Commissioner of Education, 1889-'90, vol. i, p. 298.

university. We may make the general statement that the universities of the United States open their doors to all. The Germans, with their broad views concerning scientific work in the universities, and their profound respect for scientific investigation, whether it relates to road dust or to the stars, nevertheless make sharp distinctions as to the relative worth of knowledge in the elementary courses.

Only one course, the classical, is conceived by most of them to adequately prepare for future scientific or scholarly investigation. In the United States some sort of a higher education is offered to all, no matter what the direction of the elementary and secondary work; and many a man who would have been barred forever from the privileges of university training, had a knowledge of the classics been demanded as a prerequisite foundation, has lived to demonstrate the fact that he could profit by university training, and has been able to make as penetrating research and as valuable discoveries in the realm of scientific investigation as his classically trained contemporaries. This is not to depreciate in the smallest degree the value of the classics, but simply to show that the time-honoured classics do not form the only mental pabulum that may be offered to develop the mind. Digging out Greek and Latin roots undoubtedly serves as excellent preliminary training for the future theologian, professor, lawyer, physician, or scientist, but it is not the only form of mental gymnastics that can be found for exercising the powers of the future scholar. Even conservative Germany is beginning to throw off the bonds of

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conservatism, and many of its foremost men maintain that pupils from the non-classical schools ought to be admitted to all the university faculties without restriction, save, perhaps, those of theology and jurisprudence.

With the idea in mind that they can not well serve two masters at the same time, the Germans have differentiated their school system, each class of schools aiming to accomplish a special, well-defined purpose. They are much averse to a mixing of courses and to a division of energy. Hence in Germany we do not find, as is common in America, all forms of secondary schools under the same general name, and attempting to give instruction in a multiplicity of directions. In America the "high school" is the institution where both boys and girls may receive secondary instruction, and this instruction may take the various directions indicated by the terms ancient classical course, Latin scientific course, English course, general science course, business course, etc. To the German, with his predilection for a special name to fit each individual object, and with his disgust for collective terms which may apply to various things, the appellation "high school" would be sadly inappropriate.* It is still more incomprehensible to them to think of offering all of the above courses in the same school. In Germany there is not only a special class of schools for each course of

* Their word "*Hochschule*" comprises the universities and technical schools. The term, however, is seldom used, preference being given to the special designations.

study, but there are also separate schools for boys and girls.*

2. CLASSIFICATION AND GENERAL DEFINITION OF SECONDARY SCHOOLS.

According to the end to be attained, the German secondary schools for boys are classed in general as gymnasia, or *Gelehrtenschulen*, and real-schools (*Realschulen*). By gymnasia, or *Gelehrtenschulen*, are meant literary or classical schools. Expressed in a few words, they are schools where the classics form the core of the instruction, and whose aim is to fit for university study. Flügel defines *Realschule* as "a school in which arts and sciences, as well as languages, are taught," or as "schools of utility." They make the sciences predominant in the course, modern languages are substituted for the classics, and their aim is to fit for entrance to certain technical schools and to prepare for commercial and industrial pursuits. A modification of either of these two general classes, or a compromise between the two, gives rise to the various forms of institutions, such as the Real-gymnasium and others, which appear as subclasses below.

Girls' higher schools are not usually recognised by law as higher schools on the same plane as the secondary institutions for boys. However, they are nominally, by common consent, in part so recognised,

* It may be noted that in some of the Eastern cities of the United States there is a partial differentiation of high schools for different courses, and also separate schools for the sexes.

and no treatment of secondary institutions would be adequate which omitted them. In general the girls' higher schools are classed as höhere Mädchenschulen or höhere Töchterschulen. They aim to give a liberal course of training, including considerable acquaintance with modern languages and some of the household arts, but rigidly exclude all instruction in the classics, and any extended study of mathematics and natural sciences. The special conceptions of the various girls' schools will be given detailed notice in a separate chapter.*

The Prussian secondary schools for boys include :
Gymnasia, with nine-year courses.

Progymnasia, with six-year or seven-year courses.

Real-schools, (a) with Latin, which include

1. Real-gymnasia, with nine-year courses.

2. Real-progymnasia, with six-year courses.

(b) Without Latin, which include

1. Higher real-schools (*Oberrealschulen*), with nine-year courses.

2. Real-schools, with six-year courses—in Prussia called higher burgher schools (*höhere Bürgerschulen*).

In many parts of Germany the higher burgher schools are not included with the secondary schools. However, when not thus included, there are real-schools corresponding to those in Prussia. In most of the states the higher burgher school is simply a common or people's school, with a continuation or Fortbildungs course.

Bavaria regards all the secondary schools as fall-

* Chapter V.

ing under two heads: (*a*) the humanistic schools and (*b*) technical institutions. The former include only the classical gymnasia with nine-year courses. The latter include:

1. Real-schools, with six-year courses.
2. Real-gymnasia, with nine-year courses.
3. Industrial schools, having courses two years additional to the real-school course.

These industrial schools have courses in three directions: (*a*) mechanical engineering, (*b*) chemistry, and (*c*) mining engineering. There are only three such technical schools in Bavaria, one being at Munich, one at Nürnberg, and one at Augsburg.

Württemberg has the gymnasia, real-schools, and the so-called elementary schools (*Elementärschulen*). Unlike the rest of the states, the gymnasium course is ten years instead of nine. It begins a year earlier than in the other states, so that the ultimate end attained is about the same. The elementary schools have courses of two years, and are special preparatory schools for the gymnasia. In all the other states there are the *Vorschulen* in connection with many of the gymnasia. These have a course of three years preparatory to the gymnasia proper. All of these special fitting schools are considered, however, as a part of the higher school organization, since the character and direction of the work are one with the chief distinguishing characteristics of secondary school work. A burgher school may have as long a course as a real-school or a progymnasium; but, since the course in the former is confined to the necessary or practical studies and includes no provision

for the more liberal arts, it would not be classed with the secondary schools.

In Baden all the secondary schools are called intermediate schools (*Mittelschulen*). They are of the same kind as in Prussia, with only slight deviations in length and arrangement of courses. For example, the real-schools in Baden have Latin as an elective study, while most real-schools in Germany do not offer it at all. Baden includes in the secondary school system the higher burgher schools as well as the real-schools. The higher burgher schools are of two kinds: (*a*) with four-year or five-year courses, and, as in the gymnasia, Greek may be taken as an elective; (*b*) with four-year or five-year courses, and, as in the real-schools, Latin is offered as an elective. Baden also includes the higher girls' schools with the secondary schools (*Mittelschulen*). This is not the case in most of the states of the empire.

In Saxony and the other states the schools are divided quite similarly to those described above.

3. DISTRIBUTION OF SCHOOLS AND PUPILS.

In treating of the educational systems of Germany and the United States it is very common for writers to compare our high school, though unjustly, with the German gymnasium. In that way the idea becomes prevalent in America that all the secondary schools of Germany are gymnasia. But this is very erroneous. A very large number of secondary schools, five hundred and thirty-six out of a total of a thousand and sixty-four, consist of some form of real-school. Nearly one half of all the pupils in secondary schools

attend the latter. The subjoined figures indicate approximately the proportion in each class of school in the empire.*

Gymnasia or classical schools.....	134,845
Real-schools with Latin.....	50,947
Real-schools without Latin.....	62,579
Total.....	<u>248,371</u>

See also the complete table (page 10).

Hence a comparison of the systems must include these non-gymnasial schools as a part of the system. It would be as erroneous to select only those high schools of the United States that have a thorough four years' classical course and speak of these as the high schools of the United States as to select only the gymnasia and represent the secondary system of Germany by them. The only fair comparison to be made is by taking the American high schools as an entirety, including at least all those having courses that meet state requirements, and all classes of German secondary schools, whether classical or scientific in their curricula, those having ten-year as well as those having twelve-year courses.

The accompanying tables will perhaps suffice to show that the gymnasia proper do not include nearly all of the secondary schools of Germany. Moreover, it ought to demonstrate the fallacious position taken by those who make sweeping statements concerning the meagreness of work done in American high schools as compared with German secondary schools. Not

* Bureau of Education, 1893-'94, vol. i, p. 298.

10 SECONDARY SCHOOL SYSTEM OF GERMANY.

Table showing the Distribution of Schools and Pupils throughout the Empire, 1897.*

	Gymnasias.	Progymnasias.		Real-gymnasias.	Real-progymnasias.		Higher real-schools.	Real-schools.		Higher burgher schools.	Other schools of seven years.	Other six-year schools.	Pupils in gymnasias.	Pupils in real-gymnasias and realschools.
		a	b		a	b		a	b					
Prussia.....	277	..	51	87	..	70	24	..	b	..	16	19	79,605	60,498
Bavaria.....	37	..	28	5	..	..	..	..	41	..	7	6	20,045	14,087
Saxony.....	17	..	..	10	..	..	..	..	23	..	5	6	5,636	8,198
Württemberg.....	16	..	1	2	..	..	..	..	..	..	..	2	8,138	8,194
Baden.....	14	2	2	2	2	4	1	6	8	..	..	2	4,596	7,110
Hesse.....	9	2	..	3	..	..	..	16	..	1	1	1	3,271	5,874
Mecklenburg-Schwerin.....	7	..	..	6	..	..	..	..	..	1	..	..	1,422	1,979
Mecklenburg-Strelitz.....	3	..	..	..	..	..	..	1	..	..	..	..	565	214
Saxe-Weimar.....	3	..	..	2	..	..	..	..	2	..	..	2	630	837
Oldenburg.....	5	..	..	..	..	..	1	..	..	..	1	..	811	494
Braunschweig.....	5	..	..	1	1	1	1	..	1	..	1	3	1,741	1,092
Saxe-Meiningen.....	2	..	..	2	..	..	..	..	..	..	..	1	246	448
Saxe-Altenburg.....	2	..	..	1	..	..	..	..	..	..	..	1	398	215
Saxe-Coburg-Gotha.....	2	1	..	1	2	..	..	..	..	..	..	..	473	778
Anhalt.....	4	..	..	2	..	1	..	..	1	..	..	1	932	612
Schwarzburg-Sonderhausen.....	2	..	..	..	..	..	..	2	..	..	1	..	335	235
Schwarzburg-Rudolstadt.....	1	..	..	..	1	1	..	..	..	..	..	1	179	139
Waldeck.....	1	..	..	..	..	..	..	..	..	..	..	1	148	96
Reuss (senior).....	1	..	..	..	1	1	..	..	..	..	..	..	106	..
Reuss (junior).....	2	..	..	1	..	..	..	..	..	..	..	..	285	378
Schaumburg-Lippe.....	1	..	..	..	1	..	..	..	..	..	..	1	243	..
Lippe-Deimold.....	2	..	..	..	1	..	..	..	..	..	..	..	241	67
Lübeck.....	1	..	..	1	1	..	..	..	1	..	..	1	305	270
Hamburg.....	2	..	..	1	1	..	..	..	4	..	..	7	1,025	2,000
Alsace-Lorraine.....	17	..	4	..	..	..	3	..	8	..	1	..	4,657	1,954
Total.....	436	8	84	129	18	80	35	36	147	2	33	56	136,093	116,529

(a) Seven years in the course. (b) Six years in the course. * Compiled from Statistisches Jahrbuch.

all of their secondary institutions cover the gymnasial courses, nor are all American high schools of the low standard that is usually thought of when the average is mentioned. Undoubtedly the best American high schools will bear favourable comparison with the German secondary schools for the corresponding periods that they cover and in the corresponding lines of work which they attempt. But we must bear in mind that a comparison of non-classical high schools with German gymnasia is unfair. Only the so-called classical high schools may be put in the same category, and even then we must bear in mind the disparity of ages of the graduates of the two. (see table below). The non-classical schools, if compared, must be put beside some form of real-school and not beside the gymnasium.

The American high school is the people's college and the courses of study represent all the branches of a liberal secondary education, while the gymnasium is a classical school in the fullest sense of the word. Were the ages of the pupils in the high schools the same as those of the gymnasium pupils, we might then make the comparison with such schools as have the "ancient classical courses." Even then the comparison would be only partially legitimate, as the Germans would regard our high schools having the strongest classical courses as real-schools with a little Latin and Greek, or at best as real-gymnasia.

As will be shown later, the German boy begins the classics many years before American boys reach the high school, which usually brings the first intro-

duction to Latin and Greek. Hence our schools can not pretend to give as thorough training in the classics as is given in the German gymnasia. The only reason one may have for asserting that the one class of pupils is better educated than the other at a given age, or that one is better fitted for the university than the other, must be founded upon a settlement of the question of what studies help best to educate and what studies best prepare for college. We can only compare two quantities when they are the same in kind. When the amounts of study have been set forth, then a measure of educational values must come in before the question can be settled.

4. AGES OF PUPILS IN SECONDARY SCHOOLS.

A comparison of ages shows us that German boys are in the gymnasia (also the real-gymnasia and the higher real-schools) to a considerably greater age than American boys are in the high schools. The gymnasial course being nominally one of nine years, with three years in the *Vorschule* or preparatory school, and the legal age at which children begin school being six years, the normal age at graduation would be eighteen years. But during my visits to the schools I was much surprised to find in the upper classes pupils who were no longer boys in appearance, but full-grown men, many of them with mustaches. They appeared to be fully as old as freshmen and sophomores in American colleges. On looking up the statistics of ages I found that my estimations were quite right, as the accompanying table will show.

Age of Graduates (Prussia).

DATE.	Under 17.	17 years.	18 years.	19 years.	20 years.	Over 21 years.*
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1871-'75	0.77	5.5	19.1	28.1	24.9	23.0
1876-'79	0.6	5.3	19.1	27.5	24.9	23.0
1880-'85	0.47	5.0	18.0	26.3	24.4	26.3
1886-'90	0.17	3.6	16.3	26.4	25.8	27.6
Gymnasia, 1893-'94 ...	0.07	3.6	20.1	27.1	24.8	24.1

* Paulsen's *Geschichte des gelehrten Unterrichts*, vol. ii. See also *Statistisches Jahrbuch der höheren Schulen Deutschlands*, 1896-'97.

It thus appears that an exceedingly small number are under eighteen years at the time of leaving the gymnasia, while one fourth of the number are over twenty, and 79 per cent are nineteen years of age. Moreover, the table indicates that the number under nineteen is constantly decreasing while the number above that age is constantly increasing. From the official programmes of 1895-'96 and 1896-'97, I find that many graduates are twenty-one or twenty-two years of age. Concerning the year 1890, Dr. Juling reports that 4,251 pupils announced themselves as candidates for examination. Of this number, 3,702 were successful, while 549 were held back to try it again. Of those who passed the examination, 6 were under seventeen years and 98 were seventeen years old.

Dr. Juling further writes that "Only 579 students were of the normal age of eighteen years, or, in other words, only one sixth or $16\frac{2}{3}$ per cent." Put in tabular form, the same results would read thus :

Year	{	736, or 19 per cent, were under nineteen.
		972, or 26 per cent, were nineteen.
		959, or 26 per cent, were twenty.
		1,035, or 28 per cent, were twenty-one and over.

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Thus only 736 were under nineteen, while nearly 3,000, or 80 per cent, were nineteen and over.*

On inquiring among university students the reason for the advanced age of the pupils, I learned that two causes are operative in raising the age above the normal. The first is that many pupils who enter the secondary schools, especially those who enter from the people's schools, are required to do the first year's work over because of their poor preparation. Then a good many can not finish in the nine years because the requirements are too heavy, and they are obliged to remain in the last class from one and a half to two years.

From the foregoing it will be seen that the age of the graduates is considerably greater than that of high-school graduates in the United States. The average age at graduation from Harvard is about twenty-two and a half years, which means that the preparatory schools are completed at eighteen and a half. It is true that in the West, where boys work on the farms until well grown up, the average age is sometimes greater. But, on the other hand, it is not uncommon to find high-school graduates only sixteen years of age. It is not impossible to find boys well along in their freshman year in college by their sixteenth birthday. But it is only fair, of course, to draw the comparison with such as enter school at the normal age and make the steady march without interruption. In America averages are delusive. Every one is a law unto himself. But in Germany what one does may be asserted of al-

* Das Gymnasium mit zehnjährigen Kursus.

most everybody else in the same category. What is once begun is carried out with the regularity of a machine. For the first eight years of school life strict laws compel pupils to be in attendance. Nothing but sickness can absolve them from the obligation. The classes move along with great regularity as regards age. In the Royal Gymnasium in Leipsic, I found the average age of the pupils who had just entered the lowest class, Sexta, to be ten years, ten months and sixteen days. The average variation from this was very small. The average of the class just finishing was nineteen years, ten months. Sexta, the lowest class, contained 80 pupils, while Upper Prima, the highest, contained 54, or nearly 70 per cent of those who started nine years before. Of these pupils, 47 entered this school six or more years previously, and 37 had been in the same school the entire nine years. This does not mean that 70 per cent of all who reach the fourth year of school life continue until they finish the gymnasium course. These figures are for the gymnasia alone, and take no account of the people's schools, real-schools, etc. They simply indicate the great regularity that is maintained when once the gymnasium course is begun. The separation between the people's schools and the secondary schools begins with the fourth year of school life, and, although it is safe to predict that a very large percentage of those who once enter the gymnasia will continue to the close, yet of the great masses who enter on the non-classical branch of the road very few may ever expect to reach the university.

Ages of Pupils in the Various Classes of a Few Representative Institutions.

PLACE AND SCHOOL.	VORSCHULE.			SECONDARY SCHOOL PROPER.								
	1	2	3	VI	V	IV	L III	U III	L II	U II	L I	U I
Berlin, Leibnitz Gymnasium.....	6.5	7.5	9.0	10.5	11.5	12.7	13.7	15.0	16.0	17.0	17.7	18.7
Kreuzberg Gymnasium.....	.....	.....	.....	11.5	12.3	13.7	14.7	16.0	16.9	17.8	19.3	20.3
Eutin Gymnasium.....	.....	.....	.....	11.3	12.2	13.7	14.7	15.9	17.2	17.9	18.4	20.1
Altkirch Gymnasium.....	7.4	8.7	9.8	10.7	12.7	13.6	14.2	15.1	16.5	18.1	20.4	22.8
Colmar Gymnasium.....	.....	.....	.....	10.7	12.0	12.8	14.4	15.6	16.4	17.6	18.6	19.4
Coblenz Real-Gymnasium.....	.....	.....	.....	11.8	13.0	13.9	15.4	16.2	17.6	17.5	18.4	19.3
Strasbourg Higher Real-School.....	7.1	8.3	9.8	10.9	12.7	12.9	14.3	15.5	16.9	17.8	17.9	19.6
Hamburg Real-School.....	.....	.....	.....	.....	12.7	13.5	15.8	16.0	17.3	.....	.....	.....
Barre Real-School	7.2	8.0	8.7	10.6	11.8	13.4	14.4	14.5	16.8	.....	.....	.....
Colmar Real-School.....	6.9	8.1	9.2	11.2	12.5	13.4	14.4	16.3	16.5	.....	.....	.....
Grandenz Real-School.....	7.2	8.3	9.7	10.7	12.1	13.0	14.3	15.4	16.5	.....	.....	.....
Leipsic Real-School II.....	.....	.....	.....	11.3	12.5	13.7	14.9	15.9	16.9	.....	.....	.....
Lützen Progymnasium.....	.....	.....	.....	10.8	12.5	13.5	14.0	15.1	17.3	.....	.....	.....
Pillau Real-Progymnasium.....	.....	.....	.....	10.9	12.1	12.8	14.5	15.8	17.1	.....	.....	.....
Potsdam Real-School.....	7.7	8.5	9.8	11.4	11.6	12.1	13.7	14.5	15.7	16.9	18.7	20.1
Average age.....	7.2	8.2	9.3	11+	12.3	13.3	14.5	15.5	16.6	17.6	18.7	20.1
Number of pupils considered.....	108	139	213	561	679	578	498	409	318	108	57	45

NOTE.—L, lower ; U, upper ; VI, lowest grade in the secondary school.

5. PREPARATORY SCHOOLS (*Vorschulen*).

The question of preparatory schools is one which receives lively discussion in German educational and political circles. On this question the teachers in the people's schools and the socialists may be said to be generally arrayed against the teachers in the higher schools and universities and the aristocratic and conservative political parties. The chief objection raised against the *Vorschulen* is that they engender social class distinctions. At an early age the children of the well-to-do are placed in these preparatory schools, and no common ground of meeting is possible for the children of the rich and the poor. Opponents claim that class distinctions would in no wise be decreased were all the *Vorschulen* abolished, but that, on the other hand, the very intermingling would bring them all the earlier to consciousness. To one who has passed through a system of public schools with foundation principles proclaiming equality of opportunities for all, it is difficult to comprehend the validity of the above assumptions. However, a residence of some duration in a European country can not fail to give one an insight into the rôle played by tradition in all long-settled countries, and a feeling that radical departures from the traditional following of spheres of activity into which people are born would mean social disintegration. Moreover, for a long time to come in all monarchical countries there must be and will be avenues in which people can walk apart from those unlike themselves. Even we, in our country with its fundamen-

tally democratic institutions, have select circles. We do not generally wish to affiliate ourselves with those of dissimilar aims, tastes, aspirations, and abilities. We maintain the right to foster class distinctions in many important directions. European class distinctions differ from ours more in degree than in kind.

Bavaria, Württemberg, and Baden have no *Vorschulen*, and the class distinctions are said to be just as strong there as in other parts of Germany.* This would, however, prove nothing in itself either way, for school organization is only one element of the problem. There are many other facts entering into their political and social life, and these kingdoms, being parts of the entire empire, share in the national views on social and political questions. The supporters of the *Vorschulen* maintain, with undoubted justice, that the private *Vorschule* offers many advantages in the superior character of its instruction. Not only the methods but the selection of material insures a speedier and better preparation for the superstructure which is to be erected later. The pupils also meet with those of similar aims, capabilities, and attainments; this insures greater incentives to individual exertion, and a more even development, with none of the drawbacks and hindrances encountered in schools for the masses, where the lame and the lazy impede the progress of the strong and the ambitious.

The following table shows the numbers in the

* See Rein's *Encyclopädisches Handbuch der Pädagogik*, article *Gymnasial Pädagogik*, by Schiller, p. 79; also Schiller's *Handbuch der Pädagogik*.

Prussian Vorschule connected with the various secondary institutions from the summer semester of 1892 to the winter semester of 1894-'95 : *

	Gymnasia.	Pro-gymnasia.	Real-gymnasia.	Real-pro-gymnasia.	Higher real-schools.	Real-schools.
Summer, 1892	9,326	390	4,062	1,540	885	3,830
Winter, 1892-'93.....	9,485	459	4,081	1,508	903	3,806
Summer, 1893	9,147	307	4,443	1,203	1,140	3,814
Winter, 1893-'94.....	9,413	259	3,903	1,218	1,162	3,782
Summer, 1894	9,011	293	3,802	1,096	1,341	3,701
Winter, 1894-'95.....	9,181	298	3,812	1,070	1,664	3,406

6. ORGANIZATION.—RELATION TO STATE AND CITY.

Although each state is practically independent in the government of its schools, and there is not in the strict sense of the phrase a national system of schools, yet there is a certain unity in the school organization. There are minor deviations from the general plan in the various states, but the broad lines of a unified school policy may be said to be operative over the entire empire. To facilitate this unity of principle and purpose, a school commission (*Reichs-Schulkommission*), consisting of six members selected from various parts of the empire, has been organized since 1875. One member is chosen from each of Prussia, Bavaria, Saxony, and Würtemberg, these being the four kingdoms and the principal states of the German Empire. A fifth member is chosen alternately from Baden, Hesse, Alsace-Lorraine, and Mecklenburg-Schwerin, each in turn having a representative for a period of two years. The sixth member is

* Statistisches Jahrbuch der höheren Schulen Deutschlands, 1896.

chosen alternately from the remaining states, each having a representative two years at a time.* This commission meets twice each year for the purpose of transacting business relating to the welfare of all the schools of the empire. The business office of the commission is in Berlin. Each of the states has its own methods of managing its particular school matters. There is a great similarity among them all, yet individual differences.

Prussia, the largest, has the most complicated yet most highly organized governing system of all. There is a governing body having a general oversight of all the educational affairs of the kingdom. This highest body is called the Ministerium of Spiritual, Instructional, and Medicinal Affairs (*Ministerium der geistlichen, Unterrichts- und Medizinal-Angelegenheiten*). The chief official is the state's minister, the present incumbent being Dr. Bosse, of Berlin. The Ministerium has four departments: (a) The department of spiritual affairs, (b) two departments relating to public instruction, (c) a department relating to medicine. At the head of each department is a director who has an advisory board of ten or more members. All the members of these four departments reside in Berlin. All orders of a general nature relating to the entire kingdom originate with the Ministerium, each department paying attention to its own special matters. The department of instruction has about thirty members. The departments of instruction have among their mem-

* Statistisches Jahrbuch der höheren Schulen.

bers a few specially competent schoolmen who look after the technicalities relating to instruction, teaching force, courses of study, etc. These men acquaint themselves as much as possible with conditions of the schools through the kingdom. This they accomplish by personal visitation and inspection of different localities and by a study of reports submitted to them by local officers.

To manage all the details for the entire state would form too great a task, and probably an undesirable one, and hence the management not general in nature is delegated to each of the several provinces. Each province has what may be called a provincial school board (*Schulkollegium*), consisting of several members, varying with the size of the province. The seat of these school boards is at the capital of the province.*

The foregoing boards have only a general oversight of the provincial school affairs and the details of management are left to the local school committees (*Schuldeputation*) and to the local inspectors (*Schulinspektoren*). The members of the *Schuldeputation* are members of the city council. They are usually chosen by the city magistrate or mayor, but their appointment must be confirmed by the state government. The *Schuldeputation* has charge of the external welfare of the schools, such as the

* That is, at the following places: For East Prussia, Königsberg; West Prussia, Dantzic; Brandenburg, Potsdam; Pomerania, Stettin; Posen, Posen; Silesia, Breslau; Saxon Prussia, Magdeburg; Westphalia, Münster; Hesse-Nassau, Cassel; Rhenish Prussia, Coblenz; Hohenzollern's Land, Sigmaringen.

erection of buildings, hygienic surroundings, etc., and also assists in the selection of directors and teachers.* Teachers are usually selected by the local authorities, but the Ministerium or the King must confirm the appointment. There are also various school inspectors who are limited to districts within the provinces. These are termed District inspectors (*Kreisschulinspektoren*).

Besides the foregoing boards of managers which represent the three divisions of government, national, state, and local, there are numerous boards of managers of various academies and societies which are all under royal or state authority, and in a certain sense under the control of the educational department of government.†

Thus the entire educational system, though managed by representatives, is virtually under royal au-

* Dr. A. Petersilie, *Das öffentliche Unterrichtswesen im deutschen Reiche*, p. 325.

† Among the institutions comprised under the educational department there are, besides all the secondary schools, the Royal Academy of Fine Arts, in Berlin; Royal Academy of Science, Berlin; Royal Museum, Berlin; National Art Gallery, Berlin; Royal Geodetic Institute and Central Bureau for International Survey; Royal Meteorological Institute of Berlin; Royal Astro-physical Observatory, Potsdam; royal universities, of which there are nine, besides the academy at Münster and the lyceum at Braunsberg; the three royal technical high schools at Berlin, Hanover, and Aachen; the royal normal schools for men and for women, state and city preparatory institutions, deaf-and-dumb schools, schools for the blind, Society for Art Appropriations, School for Teachers of Gymnastics, public higher girls' schools, evangelical normal schools for women, and various learned societies. (*Centralblatt*, 1896, p. 1 *et seq.*)

thority. The Minister of Education is selected by the King, and is in this sense a royal official. The King himself often personally issues decrees and edicts pertaining to educational matters. Appointments to teaching positions must all be confirmed by him or his minister, and teachers are dependent upon him even for the title of professor, etc. (See topic Titles, etc.) *

For Saxony it suffices to say, without going into details, that all the secondary schools are either royal (state) institutions or are otherwise erected and managed according to state laws. Several cities maintain gymnasia or real-schools at local expense entirely, but over even these the Ministerium has general oversight and control. Courses of study must be accepted by the state and all teachers must have their appointments confirmed by the Ministerium. In those schools entirely maintained by the cities, the director and the chief teachers are appointed by the Minister of Education. These schools usually have a committee (*Schulkommission*), consisting of the director, one member of the city council, and two members appointed by the Ministerium (upon the advice of the council). It is usually the real-schools that are maintained by the cities. Some schools are mixed state and city institutions and are governed accordingly. The final authority, however, in all cases, is vested in the state.

In Bavaria the highest central governing body is the Ministerium (*Ministerium des Innern für*

* Cf. Centralblatt, 1896, p. 315.

Kirchen und Schulangelegenheiten), whose executive officer is the Minister. To manage the details of government there is a Kollegium composed of professors of the universities, technical schools, gymnasias, and other secondary schools, together with a number of physicians, who are to look after the hygienic conditions of the schools. These persons are termed *Schulrätthe*, or school advisers.

The instructional and religious affairs of Baden are managed by the "Ministerium der Justiz." Since 1886 there has been a board of advisers severally called *Beirätthe*, who are representatives of the people of the city in which the school is located. This advisory body stands as mediator between the teachers and the Ministerium. As well as being an advisory body it serves as a check upon one-sided management on the part of the teachers. This committee is made up of the director of the school, one teacher chosen by the faculty, and three or four *Oberschulrätthe* of the city. They have advisory powers in all general questions of organization, hygienic conditions, tuition fees, and also have an advisory voice regarding the punishment of pupils, especially expulsion. All teachers are, however, state officers, and are appointed by the state. Where funds are raised by contribution from any particular religious sect, only teachers belonging to that faith may be paid from such funds. This law has been operative only since 1870 and it is said to be highly satisfactory. Since that time many teachers of Jewish faith have been added to the teaching force.

A division of the "Ministerium des Innern und

der Justiz" has oversight of the educational affairs in Hesse. The gymnasial institutions receive most of their support from the state, from private endowments and gifts, and from the tuition. They are managed by the directors, together with a Kuratorium similar to Baden. The real-schools, on the other hand, do not receive so much of their support from the state, but the buildings and appliances, and a part of the teachers' salaries, are furnished by the city. Tuition fees go toward the support of teachers, and where this is insufficient the state furnishes the balance. In both the gymnasia and the real-schools the teachers are state officials and are selected by the government, or the city appoints them subject to confirmation by the government. The remaining states have such similar methods of management that it will be unnecessary to go further into details concerning them.

The support of the schools comes from state funds, from local taxation, from tuition, and from bequests and contributions. The patrons of the schools pay tuition enough to insure their lively interest in its wise expenditure. The local aid is usually applied toward buildings, appliances, and in some cases toward teachers' salaries. In most cases free residence is furnished by the city to all the teachers.* The director always resides in the school building, which is constructed with that end in view. The remainder of the support comes from state funds. The state contributes most largely toward

* See topic, Pay of Teachers.

the gymnasia, while the real-schools are more in the hands of the people.* The support of all the secondary schools in Prussia during 1890 was derived from the following sources: 5,545,020 marks from state funds, 14,327,590 marks from tuition, 7,802,173 marks from city funds, 1,903,304 marks from property belonging to the schools, and the remainder of the 30,918,840 marks was derived from gifts and interest on invested school funds.

The public schools of Germany are not public in the sense of being free schools. With the exception of the people's schools (*Volkschulen*) of Prussia, there are no schools in which a tuition fee is not exacted. The amounts vary in different localities. All public schools are public in the sense that they admit without distinction all who are properly prepared to enter, and who will pay the necessary tuition fees. Many of the schools offer a certain number of free scholarships by means of which worthy boys of exceptional attainments may secure free tuition. However, not many of the very poor can take advantage of these, because the boys' labour cannot well be dispensed with in the family, and also because there are so many other necessary expenses connected with attendance at these secondary schools. Books are furnished by the pupils, board is no small item, and then to keep up appearances in the matter of dress is more than the poor can provide for. Since mainly the sons of the rich attend the secondary schools, the

* According to Rethwisch, Deutschlands höheres Schulwesen im 19. Jahrhundert, p. 144.

poor going generally to the people's schools, the average are very well clothed, and all must wear some uniform, usually a special kind of cap. To deviate from custom in the matter of dress is a much more serious affair with them than with people in America; hence the expense connected with securing a secondary education debars nearly all but sons of the wealthy or the well-to-do. Below are indicated the amounts of tuition paid in various states and a few representative cities:

	Marks Yearly.
Prussia, gymnasia, real-gymnasia, higher real-schools.....	120
Prussia, progymnasia, real-progymnasia.....	100
Prussia, higher burgher schools or real-schools...	80
In same if Latin is taken....	120
Bavaria, three lowest classes (all schools).....	30
Bavaria, three middle classes (all schools).....	36
Bavaria, three highest classes (all schools).....	40
Baden, three lowest classes (all schools).....	75
Baden, other six classes (all schools).....	84
Hesse, three lowest classes (all schools).....	96
Hesse, other six classes (all schools).....	108
Dresden and Bremen (all schools).....	120-180
Leipsic (all schools).....	80-240
Hamburg, gymnasia and real-gymnasia.....	192
Hamburg, real-schools.....	144
Hamburg, vorschulen.....	120

It is the custom to admit sons of all the teachers or of university professors without requiring tuition. In some of the schools five per cent. of all the pupils may be admitted free.

In *résumé*, it is to be noticed that while the people—the patrons of the schools—are given a certain

advisory voice, they have nothing final to say in the management of their children's education. This advisory function is fulfilled by the school committees—the Schuldeputation in Prussia, the Beiräthe in Baden and Hesse, the Schulkollegium in Bavaria, and by similarly empowered bodies in other states. In each of these local bodies the director of the institution is usually one of the members. He is supposed to be most intimately acquainted with the needs of the school and is a qualified representative of the scholastic and pedagogical functions of the board. In nearly all cases teachers in the secondary schools (in fact, nearly all teachers) are state officials, receive their appointments from the state, and are amenable to central authority only. To be sure, the local commissions have a voice relating to teachers, but it is only advisory at most. As well as teachers, nearly all the managing officers of the schools are appointed by central authority. Thus the state is thoroughly paternalistic in the management of its secondary school system. It may oblige a community to maintain a secondary school, and the community may do so independently only by permission, and in this case the state provides that only centrally authorized teachers may instruct. In most instances the Government appoints the instructional force,* grants particular titles to the teachers, arranges the courses of study, approves the buildings, etc. This insures a thoroughly and uniformly prepared teaching force

* That is, the confirmation of all appointments rests with the Ministerium.

and provides against remiss methods of school management. The state stipulates the salaries that shall be paid to teachers, either by direct tariffs or by granting to certain cities the privilege of fixing their own rates, thus insuring as good talent for the smaller schools as for the larger. This was found necessary after some degeneration of the smaller schools, because of the best teachers flocking to the cities where larger salaries were paid.

7. STIMULI TO SECONDARY EDUCATION.

There are several powerful stimuli which exert a strong influence in keeping boys in school longer than their inclinations might otherwise lead them to remain. These stimuli lie chiefly in the social prestige, enhanced business opportunities, advantage for future scientific investigation, and exemption from military service coming through the completion of regular school courses. In the first place, one's social standing in Germany, outside the nobility, depends almost wholly upon the evidences of one's scholastic attainments. The boys who receive only the elements of education, such as are afforded by attendance at the people's schools, are almost without exception forever doomed to intercourse with only the working classes, no matter what they may have accomplished by themselves. Standing in society is determined more by the school certificate than by actual qualifications. Germany is pre-eminently a land where one's word and address must be backed by legally executed vouchers. This is no less true in the active walks of business life

than in social circles. Not even a butcher's boy, a printer's apprentice, or a servant can find employment without written evidence of attainments and former good conduct. What is true in the lower walks of life is no less true, but even exaggerated, in the higher. With these safeguards against impostors and the incompetent it necessarily follows that all certificates of attainments are honoured at their highest possible value. A given diploma, certificate, or "Berechtigung" is a guarantee of recognition in every particular assumed in it. The phrase "self-made" man is still placed in quotation marks by the Germans. The entity corresponding to it is not indigenous to their soil, and is almost incomprehensible to them. To them, accomplishments are only possible through prolonged and careful discipline secured under authorized masters. Germany is pre-eminently the land of long apprenticeships, where genius is allowed to blossom only after long processes of cultivation. Hence, when a given calling is looked forward to by a youth or by his parents for him, the only possibility of realizing those hopes is through conformity to the regular courses leading up to that end. To deviate means certain failure, to persevere means almost certain success.

Again, the various forms of certificates of attendance at school give corresponding rights to pursue study in higher institutions of learning. Without formal preliminary training it is assumed that no one can become fitted for advanced study. Attainments acquired by private study are not recognised as ade-

quate preparation for study in higher institutions. They usually even deny one an examination to demonstrate that he is capable of carrying on chosen work in the higher schools. Students who have not had regular gymnasial courses sometimes take just the last year of the course and then take the leaving examinations. On rare occasions they are assigned by the provincial school-board to some gymnasium to take the examination for the diploma, without taking the work in Prima. A specific preparation is deemed necessary for each branch of business and for each course of higher study, and hence, if one has aspirations in a given direction, the way of attainment is plainly marked out. For example, a post-office official must secure a certificate of at least six years of successful study in a secondary school; a special student of mathematics in a university must secure a certificate of at least nine years of study. This may or may not have included Latin or Greek, there being some latitude allowed in this direction; but a student of theology, law, medicine, or philosophy can never hope to listen to the masters without securing evidence of the requisite amount of classical instruction. All may reap as they choose to sow.

In the fourth place, perhaps one of the most potent factors inducing higher training in the secondary schools is the exemption from two of the three years of compulsory military duty, to which all adult male citizens of Germany are subject. To secure this reduction of time is an escape from a heavy burden, and is considered a great honour as well; and

parents exert themselves to the utmost to allow their sons to share it. Furthermore, it adds two years to their period of active business life or study, which is a most important consideration. To be obliged to serve three years in the army during the best years of young manhood is a hardship which all gladly avoid. But perhaps more potent than the exemption from the two years' onerous service is the distinction which comes from being known as having wealth enough to attend school nine or ten years and to pay the necessary expenses connected with the volunteer service, for every volunteer must provide his own uniform, accoutrements, and board. Again, he stands a chance for promotion, which ordinary conscripts do not enjoy.

Below are enumerated in detail the privileges conferred by a certificate received on completion of the entire courses and for definite portions of the various courses in the several classes of schools in Prussia. The other states allow such similar privileges that they need not be given in detail; only important deviations are noted. From a detailed examination of what follows it will be seen that the school certificates are not only evidences of scholarship, but that they have a definite professional value, being legal certificates of entry into the professions, the various grades admitting to different kinds of employment, from Government service to pharmacy; and it is most important to remember that, conversely, it is unusual to gain entry into the various callings of life by other than the prescribed routes.

I. STATE RECOGNITION FOR COMPLETION OF FULL SCHOOL COURSE.

A. Gymnasia.—The certificate gives the right :

1. To study in the university in any department, and to take the examinations for the higher church and state positions. (These include teaching, law, telegraph, postal, and marine service, etc.)

2. To study in the building and mechanical departments of the royal technical high schools, and in the mining and metallurgical schools.

3. To study in the royal agricultural academy, and to become a candidate for teaching in the same.

4. To enter the royal academy of church music for the purpose of receiving instruction as organist, chorister, or music teacher in higher teaching positions.

5. To entrance as apprentice for higher postal and telegraph service, and to an examination for position as manager or overseer of higher positions from secretary on.

B. Real-Gymnasia.—1. The certificate admits pupils to the university in the philosophical faculty (excluding from law, medicine, and theology) to study mathematics, natural sciences, and modern languages.

2. And to all other privileges granted by the gymnasia certificate.

C. Higher Real-Schools.—The certificate is recognised as indicative of extended instruction and admits :

1. To the study of mathematics and natural

sciences in the university, and to the examinations for higher school positions in these branches.

2. Possessors of this certificate are entitled to examination for positions in shipbuilding and the machinery departments of the royal navy.

3. To all other privileges mentioned in *A* and *B*, except to study in the royal academy of music, and for positions of teacher of music in high schools.

4. To a chance to take supplementary Latin in a real-gymnasium, or Latin and Greek in a humanistic gymnasium, and then to receive corresponding privileges.

D. Higher Burgher Schools or Real-Schools (höhere Bürgerschulen) (courses six or seven years).—

1. To all branches of the subaltern service, for which a seven-years' course is demanded, also for civil supernumerariat in the royal railway service, the royal provincial and local district boards of management, mining and metallurgical works (office work), and in recording or registering offices.

2. To supernumerary positions in the internal revenue offices.

3. To examination for position as surveyor. (In this and (2) evidence of training in a technical school must be given.)

4. To study in the royal agricultural high school.

5. To study in the Royal Academy of Art in Berlin, and to examination for position of drawing teacher in high schools.

6. To study in the Royal High School for Music in Berlin.

7. To enter service in the national banks.

8. To enter the second class in an industrial school (*Gewerbeschule*).

9. To enter the Horticultural School in Potsdam (provided evidence of Latin is given).

10. To take an apothecary's examination, if the certificate is accompanied by evidence of Latin equivalent to Upper Secunda * in a real-gymnasium.

II. STATE RECOGNITION FOR COMPLETION OF PARTIAL COURSES.

(a) *Civil Service.*

The certificate of one year's attendance in Prima in a gymnasium, real gymnasium, or higher real-school entitles the holder to (1) positions in the internal revenue service; (2) to higher positions in the telegraph service.

The certificate of fitness to enter Prima in any of the secondary schools entitles the holder to study as a veterinary surgeon or as a dentist, to examination for positions in the clerical departments of various governmental bureaus connected with mining industries, surveying, etc. The certificate of fitness to enter Lower Secunda gives the privilege to enter several subordinate positions in the same lines of service mentioned above, while a certificate for Tertia gives privilege to enter still other subordinate positions.

* The grades or classes in the secondary schools are named as follows: Sexta, Quinta, Quarta, Lower Tertia, Upper Tertia, Lower Secunda, Upper Secunda, Lower Prima, Upper Prima. Sexta is the lowest class and Upper Prima the highest. In the tables they are designated as VI, V, IV, L. III, U. III, L. II, U. II, L. I, U. I.

(b) Military Service.

The privilege to be obtained by a certain amount of scholarship which will give immunity from a portion of the three years' military service is among the most enticing. To secure this immunity it is necessary to possess (1) a full-course certificate from a gymnasium, real-gymnasium, or a higher real-school, or (2) a certificate of the successful completion of the work in Lower Secunda of any of the above schools, or (3) a certificate indicating that the candidate has completed the course in a real-school, higher burgher school, progymnasium, or a real-progymnasium. That is, those schools with six-year or seven-year courses are recognised as equivalent to the first six years of the courses in the corresponding institution with a nine-years' course. If the school has a seven-years' course its completion gives the same commercial value as the completion of Upper Secunda in the higher schools. A certificate of completion from one of these lower schools admits to Upper Secunda in one of the corresponding higher schools. To indicate what an exceedingly strong incentive this last factor appears to be I append the following statistics from Prussia for the year 1889-90:*

Total number of pupils in secondary schools..	135,337
Number that left school.....	20,038
(a) With the graduation certificate.....	4,105
(b) With certificate entitling to one year's military service.....	8,051
(c) Without even reaching this point....	7,882

* Lehrpläne und Lehraufgaben für die höheren Schulen, Preussen.

That is, from all the secondary schools only about 25 per cent. of those who left them had completed the nine-year courses; 40.2 per cent. left after securing the privilege of two years less military service; and only 39.3 per cent. abandoned study without securing any definite privileges.*

8. DISTRIBUTION OF PUPILS BY GRADES AND AGES.

The two following tables indicate the distribution of pupils in the various classes or grades. The first gives the percentages in all the secondary schools having nine-year courses; the second gives the numbers in each of the classes in each form of school separately. Ten of the principal states are given in detail and the rest of Germany as a whole. The principal points to be noted are the exceeding uniformity of attendance up to Lower Secunda and the rapid decrease before entering the next higher class. The tables are compiled from statistics furnished by Rethwisch in Deutschlands höheres Schulwesen im 19. Jahrhundert.

* "Hierdurch ist dann jetzt das sogenannte 'Freiwilligrecht' gewissermassen der Angelpunkt geworden, um den sich der ganze Aufbau des höheren Unterrichtswesen in Preussen gegenwärtig dreht: ob zum Nutzen oder zum Schaden der wahren Bildung, kann nur die Zukunft entscheiden . . . Im mittelpunkte des ganzen Frage steht die Berechtigung zum einjährig-freiwilligen Heerdienst. Sie hat eine kleine Geschichte für sich" (Baumeister's Handbuch der Erziehung, i, p. 63).

*Percentage of Pupils in Each Year of the Nine-Years' Course.**

	U. I	L. I	U. II	L. II	U. III	L. III	IV	V	VI
Prussia.....	3.1	4.2	5.7	10.4	12.0	14.7	16.3	16.8	16.8
Bavaria.....	3.46	3.74	4.65	7.96	9.73	12.64	15.69	19.81	22.32
Saxony.....	5.14	4.91	6.32	9.89	12.14	13.74	16.71	16.66	14.44
Württemberg.....	.....	15.16	.....	.....	.....	.....	84.84	.....	.....
Baden.....	3.52	4.10	5.01	9.98	11.25	14.87	17.34	16.71	17.17
Hesse.....	3.2	3.3	9.5	13.1	13.7	16.2	15.9	15.7	9.4
Mecklenburg-Schwerin.....	3.5	4.2	6.0	10.5	12.9	15.5	16.1	17.0	14.3
Saxon Prussia.....	3.43	4.49	6.15	12.68	13.29	16.22	16.83	14.12	12.79
Mecklenburg-Strelitz.....	8.60	.....	16.55	.....	23.75	.....	19.90	15.02	16.18
Oldenburg.....	9.70	.....	8.65	10.85	15.27	16.49	13.20	13.85	11.99
Braunschweig.....	6.85	2.82	9.04	8.92	14.76	10.42	16.61	16.16	14.42
Saxe-Meiningen.....	4.0	4.0	4.0	9.0	8.0	13.0	18.0	22.0	18.0
Saxe-Altenburg.....	3.47	5.47	5.8	12.6	12.2	15.18	17.4	15.8	10.2
Saxe-Coburg.....	3.56	5.34	4.27	10.50	11.21	14.59	18.86	17.61	14.06
Saxe-Gotha.....	4.65	.....	13.18	.....	28.46	.....	19.49	17.83	16.39
Anhalt.....	3.08	4.14	6.59	12.62	12.62	15.00	15.57	14.56	15.82
Schwarzburg-Rudolstadt.....	2.11	.....	18.84	.....	24.21	.....	18.16	20.79	15.79
Schwarzburg-Sonderhausen.....	6.29	.....	16.14	.....	24.43	.....	20.0	19.0	14.14
Waldeck-Pyrmont.....	2.62	4.49	6.36	10.11	13.10	19.10	17.22	14.60	12.35
Reuss ältere Linie.....	4.51	3.03	2.52	9.09	13.64	16.67	14.65	17.17	18.69
Reuss jüngere Linie.....	2.5	3.5	5.0	11.5	12.0	15.0	17.0	16.5	17.0
Schaumburg-Lippe.....	5.2	6.0	9.6	13.1	12.0	12.3	15.5	15.1	11.2
Lippe.....	5.18	4.73	6.31	12.16	9.68	11.26	14.64	13.92	17.12
Lübeck.....	12.82	.....	17.03	.....	25.08	.....	17.44	18.06	14.57
Bremen.....	1.42	1.68	5.11	12.76	13.46	15.52	19.73	15.37	14.95
Hamburg.....	1.4	1.5	2.1	10.8	12.5	16.4	17.6	19.2	18.4
Alsace-Lorraine.....	2.1	3.2	6.1	9.4	13.3	14.4	17.5	18.5	17.5

* Compiled from *Rethwisch's Deutschlands höheres Schulwesen im 19. Jahrhundert*. The real-schools, progymnasias, and real-progymnasias have only the first six years; hence one reason for the much smaller percentages in the three highest classes. Explanation: The table indicates that 3.1 per cent. of all pupils in Prussian secondary schools are in Upper Prima; 16.8 per cent. in Sexta, etc.

Table showing the Number of Pupils in the Various Classes in the Different Kinds of Schools during 1889-90.*

	U. I	L. I	U. II	L. II	Gymnasia		L. III	IV	V	VI	Total.
					U. III	L. III					
Prussia.....	3,097	4,895	6,133	8,034	9,830	11,236	12,043	12,170	12,170	12,057	80,979
Bavaria.....	988	994	1,174	1,698	1,880	2,201	2,745	3,088	3,284	3,284	18,002
Saxony.....	469	439	522	623	750	789	730	699	615	615	5,636
Württemberg.....	302	287	273	405	272	292	365	369	378	378	3,340
Baden.....	354	336	416	555	546	622	642	508	554	554	4,593
Hesse.....	159	176	262	344	304	313	292	263	294	294	2,407
Mecklenburg-Schwerin.....	90	108	127	165	184	188	191	193	176	176	1,432
Alsace-Lorraine.....	157	239	340	524	541	686	772	828	817	817	4,913
Braunschweig.....	113	102	144	244	241	212	235	236	227	227	1,719
Lübeck, Bremen, Hamburg.....	125	139	177	253	298	299	424	310	359	359	2,867
Rest of Germany.....	333	361	503	672	701	798	822	868	738	738	5,589
<i>Real-Schools with Latin.</i>											
Prussia.....	535	770	1,323	3,604	4,272	5,637	6,059	6,132	6,132	6,153	34,465
Bavaria.....	29	36	40	105	110	132	.....	.....	.....	.....	2,417
Saxony.....	104	122	89	319	361	391	322	287	308	308	4,868
Württemberg.....	42	37	452	496	732	749	796	736	713	713	4,381
Baden.....	19	39	75	245	300	552	675	725	742	742	1,083
Hesse.....	58	50	73	153	132	164	144	151	158	158	1,407
Mecklenburg-Schwerin.....	29	36	70	153	203	238	239	246	177	177	582
Alsace-Lorraine.....	6	1	5	20	26	86	125	123	196	196	338
Braunschweig.....	7	7	34	59	59	62	63	60	40	40	218
Lübeck, Bremen, Hamburg.....	37	39	89	221	228	296	200	218	218	218	1,456
Rest of Germany.....	33	53	148	227	420	472	698	540	490	490	3,152
<i>Real-Schools without Latin.</i>											
Prussia.....	27	34	174	1,486	2,774	3,015	4,009	4,446	4,588	4,588	19,493
Bavaria.....	.....	72	152	568	802	1,354	1,871	2,738	3,382	3,382	10,958
Saxony.....	139	19	154	300	553	619	1,100	1,100	879	879	5,082
Württemberg.....	44	98	452	496	732	749	796	726	713	713	4,808
Baden.....	.....	.....	40	257	337	401	519	537	522	522	2,613
Hesse.....	.....	.....	313	362	491	633	641	649	183	183	3,202
Mecklenburg-Schwerin.....	.....	.....	.....	30	53	92	117	189	132	132	672
Alsace-Lorraine.....	.....	.....	98	178	276	380	529	553	480	480	2,513
Braunschweig.....	61	61	176	45	269	103	203	259	255	255	1,562
Lübeck, Bremen, Hamburg.....	45	23	112	463	694	698	1,076	1,084	1,008	1,008	5,503
Rest of Germany.....	8	10	56	179	277	324	412	355	327	327	1,988

NOTE.—"VI" is the lowest class and "U. I" the highest.

* Compiled from Rethwisch.

9. SOME GENERAL FEATURES OF THE INNER ORGANIZATION OF SECONDARY SCHOOLS.

Each school ordinarily has from twenty to thirty instructors, including the director. He usually lives in the building. In fact, nearly all elementary as well as secondary schools provide the residence, or *Wohnung*, of the director. He thus has continuous oversight over the school, as he would have over his own dwelling. The director is usually a man well advanced in years. The majority of his associates are also men whose heads have been whitened by the frosts of many winters. There is ordinarily only a sprinkling of young men among the faculty. These are frequently young men who have just succeeded in earning their doctor's degree from the university. Promotions are slow and changes very infrequent, as I have elsewhere pointed out; hence the *personnel* of the faculty remains very constant from year to year. The majority, perhaps, never teach in more than one school during their lives; thus their particular school becomes thoroughly known to them. Since boys not uncommonly attend the same school continuously during the nine years' course, the teachers and pupils are as well known to each other as members of a family. When the schools are large there are two divisions for each grade. Forty is the maximum number allowed in a room. The system followed may be termed the class system in the lower grades and the department system in the higher grades. The reasons are obvious. The large buildings are divided

into class rooms, where each class does all of its recitation work, except such as requires special demonstration rooms. The studying, however, is all done at home, if lessons are to be prepared. Much of the ordinary preparation that we are accustomed to assign in American schools is dispensed with, the class work taking the place of it. The teacher plays a much more important *rôle* than books. Ordinarily instruction is imparted orally by the teacher. Lessons are not assigned from text-books so much as in American schools, but pupils are held to recite upon the work that has been explained by the teacher. This oral instruction given by the teacher is the main source of information. This results in producing good listeners. By the time pupils reach the university they have developed a good power of attention in listening to lectures. "But the advantage is not wholly on the side of the Germans. Our boys have greater power in getting usable information from books." *

The discipline in the schools is always excellent. It is not entirely due to the authority exerted over the pupils while in the schoolroom. It is a national characteristic for subordinates to implicitly obey their superiors. Cases of severe punishment are not numerous. Pupils obey as a matter of course. Whenever the teacher or a visitor enters the room the pupils all rise and stand respectfully until the incomer is seated, or until they are signalled to be seated.

* E. J. Goodwin. Impressions of Prussian Schools. Educational Review, xii, 462.

Among the punishments spoken of in the legal regulations are extra home work, deprivation of posts of honour or of particular places in the class, public or private reproof, arrest and imprisonment in the "Karzer" or school prison,* withdrawal of stipends, solitary recitations, and expulsion. Most of these may be inflicted by the director, the severe ones only by the faculty in council, and expulsion may follow only after the verdict of the local school commission.

Notwithstanding the thorough scholastic training of the teachers, there appears to me to be something pedantic about the German schoolmaster. He does not appear to have flexibility of method; there is too much according to one fixed rule. Throughout there seems to be too little of what we Americans are pleased to term "practical insight." The Germans think us too practical and not scientific.

The schoolrooms all have the high platforms for the teacher. Upon this there is a standard type of desk, behind which the teacher remains almost invariably. He does not get down among his boys, "touch elbows with them," and work with them. He is literally and figuratively above them. In all my visits I never but once heard a pupil ask a single question. The questioning attitude we deem most important, but in Germany pupils "speak when spoken to," and seldom otherwise. The discipline is most perfect from a soldierly point of view. Teachers seem to make little effort to maintain

* This is a common university punishment.

discipline, though on occasion they are very severe, and sarcasm and words of reproof are frequent. From the German ideal of education, their system must be admitted to be most perfect.

They have an aim in view, standing out clear and distinct, and by faithfulness and unswerving perseverance they approach their ideals as perhaps no other nation does. They certainly "correlate the pupils with the time and place in which they live."

As a rule, the school buildings are dreary, unattractive-looking structures. They present to the eye a square, unpleasing appearance. While in the United States the school buildings generally are the most elaborate buildings in the towns and villages, in Germany they bear no comparison with the court-houses and other public edifices. Usually the brick-work is entirely plastered over on the outside in the prevailing style of the country, giving a most monotonous appearance. Almost invariably they are poorly lighted and poorly ventilated. It is a common remark among Americans that Germans have no idea what good ventilation is. Too frequently the windows are so covered with exhaled moisture that one can scarcely see out of doors. Day after day I have sat in the lecture room of one of the most renowned German physiologists and watched the windows gradually coat over, as the lecture progressed, with exhalations from the breath of the auditors. At the close of the lecture the glass would be only translucent, not transparent. And the professor continued to theorize.

Defective eyesight is well known to be exceed-

ingly prevalent among students in secondary schools and universities.* This the Germans attribute in part to the use of black slates and of German print. There is much justice in the last assertion; but it is my firm belief that much more is due to the effects of illy lighted rooms (schoolrooms and homes), in which they are obliged to do all their studying. Especially in winter, when a light is necessary until nine in the morning and as early as half-past three in the afternoon, the rooms are exceedingly dim.† Very low intensities of light, less than from three to ten candle power, are sources of even greater fatigue than small type, and one hundred candle power may be considered a very safe limit. Yet the illumination in German schoolrooms has been found frequently less than two candle power.‡

Most of the school furniture is of the crudest sort. "I am afraid that if American boys, who are used to luxurious patent desks and seats, were asked to sit for a term on a German school seat, they would make strong objections. The seats are hand-made and somewhat similar to those some of us used to sit on in the country schools a quarter of a century ago. However, in all my country-school experiences I never sat on any so awkward-looking or uncomfortable. A straight, upright board, about eight inches

* See later on, Emperor William's speech at the "December Conference."

† Cf. Dr. Klemm's article in Bureau of Education Reports, 1891-'92.

‡ Griffing and Franz. Conditions of Fatigue in Reading. Psychological Review, vol. iii, p. 530.

wide, forms the back of the seat. The desks are, however, made for two. (In Prussia they are commonly long affairs, accommodating (?) four or five. When the middle boy leaves his seat the end boys have to get up too.) The desks and seats are made together, and heavy enough not to need fastening to the floor. A piece of timber, from three to four inches high, forms the base, and over this the pupils must step every time they get in or out of the seats or stand up to recite, for neither the desks nor seats are hinged. Frequently the recitation benches are backless. When we consider that recitations are from forty-five to fifty-five minutes long, it seems heroic treatment to subject small boys to, or even larger ones.”*

There appears to be a great lack of the modern schoolroom appliances so common in America. I have reference here to appliances which contribute to comfort, and such as are mechanically easily adjusted, etc. Their maps, charts, models, “*Anschauungs*” material, etc., are usually very good and often excellent, but all lack that quality which we should term “handiness.” Maps are usually of excellent print and of harmonious colours, but the arrangements for handling are very primitive—no patent rollers that will enable one to exhibit or remove a map in a twinkling, but rather hung on a nail by a string, or held in the hand. Of the variety of appliances and illustrative material used in construc-

* This paragraph first appeared in the *Wisconsin Journal of Education*, June, 1897. See *Schools in Germany*.

tion I shall speak later on in connection with a consideration of each of the subjects.

Blackboards of proper size are unknown. The largest I saw were not more than four feet by eight feet in size. They are all of the same style, being suspended on a ponderous wooden frame, or else placed on a sort of easel. The blackboard is not used as a means of exhibiting pupils' work in recitation. It is used solely by the instructor. Pictures and statuary are not so abundant on the walls as one would expect in a country where art has attained such high rank.

Schools are in session six days of the week and from forty to forty-two weeks of the year. Since each pupil has from thirty to thirty-three hour lessons a week, or from five to five and a half lessons a day, the boy's time, when his home school work is reckoned in, may be said to be pretty fully occupied. The sessions begin at seven o'clock in the morning during the summer, and at eight o'clock in the winter. Not long since the times were respectively six o'clock and seven o'clock. American boys would think this rather heroic treatment. The vacations are as follows, varying only slightly in different states:

1. Easter, two weeks. (The school year begins after the Easter vacation.)

2. Pfingsten (*Whitsuntide*), from five days to one week.

3. Summer, about four weeks. Prussia, July 1st to August 1st; Saxony, begins third Saturday in July; Bavaria, eight weeks, July 14th to September 10th; Baden, Bremen, Berlin, each five weeks.

4. Michaelmas, about two weeks.

5. Christmas, usually two weeks.

It will be seen that the German children are in school many more hours during a year than our own pupils. The number of weeks in the school year is greater than in most sections of the United States. The question naturally arises: Can we, with advantage, lengthen our school year and the number of weekly hours in our own schools? I think where our high-school pupils have eighteen or twenty recitations weekly, together with all the outside work that necessarily accompanies proper preparation, that they are sufficiently taxed. I would discourage lengthened school years also. Here, as in other matters of school management (as I have indicated elsewhere), local conditions must be taken into consideration. For example, the Germans are favoured by climatic conditions promotive of more regular study, and longer school years. In most sections of the United States, the climate is bracing and vigorous, and conducive to vigorous action, mental and bodily, but at the same time the processes of disintegration and waste are much more rapid. If the German boys accomplish more during their school life than our own boys, we must place as one of the explanatory factors the climatic conditions which allow their physiological machinery to be driven harder. I am not sure that American boys cannot accomplish as much in the aggregate, but from their natures and the conditions under which they live, they will work more actively and vigorously for a time, and then they require a period of rest. They do their work by spurts, as it

were, the German boys by unintermittent plodding. In this connection the following quotation bears me witness: "It may not be irrelevant to mention the effect of our American climate upon the health of our people. The more rapid and greater changes of temperature experienced here than elsewhere, and the dryness of the atmosphere, as compared with that in other civilized countries, gives rise to more exposure and more trying hygienic conditions. The climatic effects of our country are at once noted by foreigners in the stimulus and general exaltation of feeling which are produced, but the vital force is too rapidly exhausted, and one is left without reserve powers of endurance." *

To indicate the equability of climatic conditions I append a meteorological report for Leipsic during the year 1896. For purposes of comparison a table is also given showing meteorological summaries for representative American cities.

	Temperature.	Barometer.	Precipitation.
January.....	— 1.5° Centigrade.	751.8 mm.	32 mm.
February	+ 0.5°	751.6	36
March.....	+ 3.3°	750.7	48
April.....	+ 7.9°	750.4	39
May.....	+ 13.2°	750.9	45
June.....	+ 16.7°	751.6	72
July.....	+ 17.9°	751.8	65
August.....	+ 17.5°	751.8	65
September.....	+ 13.9°	752.2	38
October.....	+ 9.1°	751.4	44
November.....	+ 3.7°	750.8	45
December.....	+ 0.4°	752.2	46

The table below is not given in the same units as that for Leipsic, but they may serve as well for comparison of equability of climatic factors.

* Health Statistics of Women College Graduates, p. 8.

*Meteorological Summary for Five Representative Places in the United States (1896).**

	TEMPERATURE (FAHR.).				BAROMETER (INCHES).				PRECIPITATION (INCHES).			
	Albany.	Philadelphia.	Cincinnati.	Chicago.	St. Louis.	Albany.	Philadelphia.	Cincinnati.	Chicago.	St. Louis.	Albany.	Philadelphia.
January.....	Fahr. 20.2	31.1	33.6	27.0	35.0	30.11	30.07	29.32	29.23	28.55	0.98	1.57
February....	24.8	33.6	35.0	25.6	36.8	29.79	29.79	29.09	29.05	29.41	4.03	6.87
March.....	27.1	35.8	36.8	31.2	40.6	29.89	29.88	29.23	29.16	29.48	4.66	4.11
April.....	50.2	55.2	61.6	53.4	64.8	30.02	30.02	29.27	29.14	29.44	0.98	1.19
May.....	63.6	67.2	71.2	65.5	73.0	29.91	29.92	29.19	29.07	29.37	1.55	2.27
June.....	67.7	70.4	73.1	67.0	74.0	29.88	29.87	29.18	29.11	29.40	2.49	4.07
July.....	71.2	77.6	76.2	72.2	79.0	29.90	29.92	29.23	29.15	29.45	3.57	3.27
August.....	72.6	76.6	75.1	72.8	79.4	29.93	29.93	29.25	29.16	29.46	2.25	0.46
September..	62.2	67.8	65.5	60.6	69.2	29.95	29.94	29.22	29.15	29.44	3.31	2.76
October.....	48.4	53.6	53.4	49.6	57.2	29.96	29.94	29.24	29.18	29.46	1.53	2.08
November...	44.0	50.4	48.0	38.4	46.2	30.09	30.10	29.31	29.22	29.56	1.80	2.50
December...	26.2	34.7	38.1	32.9	40.8	30.09	30.07	29.34	29.27	29.60	0.73	1.00
Year.....	48.4	54.5	55.6	49.8	57.9	29.96	29.95	29.24	29.16	29.47	27.68	32.15
											34.48	33.14
												1.43
											1.12	1.43
											3.48	2.81
											1.26	2.03
											2.79	2.43
											0.50	9.12
											2.17	4.16
											2.70	2.82
											7.40	4.67
											3.70	3.52
											5.00	2.42
											2.29	1.36
											3.29	2.16
											1.09	1.05
												37.55

* Report of the Weather Bureau, 1896-'97, Part III.

The average temperature at Karlsruhe for January was 0.1° C. and in July 19.5° C. In Berlin it was -0.8° C. and 18.8° C. during January and July respectively.

The legal school age is from six to fourteen, during which period attendance is compulsory. The compulsory laws are not dead letters either, as they are in so many of our States. The school director gives each year to the police in his district a list of pupils of school age, and the police stand ready to co-operate with the school authorities in enforcing attendance. Children are on no account to be excused except in case of illness. When a child is absent from school, it is the business of the class teacher to ascertain the cause. Should the pupil be needlessly absent, the case is reported to the director, who sends the *Pedell* or janitor to bring the pupil to school. If the servant fails to convince the pupil or his parents, the police are notified, and it is needless to say that matters are speedily adjusted. On returning to the school after an absence each pupil must bring a satisfactory excuse, or the parents must pay the prescribed fine.

During the period of compulsory attendance pupils may attend any school they or their parents choose—public or private, elementary or secondary—provided only that the school meets the government requirements.

In addition to the eight years of compulsory attendance each pupil must attend a Fortbildungsschule, or continuation school, two hours weekly for two years. In this school instruction is provided

in studies of a practical nature, such as bookkeeping, business arithmetic, penmanship, etc. The Fortbildungsschule course is not necessary if the boy continues his higher studies.

Every city has a school physician who looks after the health of the pupils and the sanitary conditions of the buildings, grounds, etc. Particular care is exercised to prevent the spread of contagious and infectious diseases. Pupils must all have certificates of successful vaccination on entering school, and of revaccination after twelve years of age. Children suffering from any contagious disease are excluded from school, as are also children from the same family if they are liable to spread the disease.

Although all buildings are constructed according to governmental regulations, yet the seating, lighting, and heating are far from ideal. School playgrounds are usually very inadequate. The small space around the buildings is generally given up to the cultivation of flowers or to plants for botanical purposes. It is an excellent idea to have these school gardens for teaching purposes, but it is a mistake not to provide ample playground. Money expended for school playgrounds is money well invested. But in Germany, room for sports, games, and free play is deemed unnecessary. German boys are not encouraged to enter into sports like baseball, football, tennis, etc. The stiff, conventional, military "Turnen" is thought to be sufficient. Some features of this sort of exercise are excellent, but they in no way form a substitute for free play and well-regulated games. The five or ten

minute "pauses" between class exercises are passed in slowly promenading around the school grounds, and at the same time munching a piece of black (rye) bread. Some teacher is always detailed to oversee the play (?) ground during these intermissions. He, also, munches his Roggenbrod as he keeps his watchful eye over his flock. (Even university students may be seen munching their Roggenbrod as they promenade the corridors between lectures.) At the tap of a bell the sauntering flock form a line in a column of twos and march into the schoolrooms. Even their chance of getting some amusement from looking into the streets is purposely hindered by the way in which the yard fence is constructed. The fences are usually of iron palings, but just at the height at which the pupils could look out the fence is made solid by a strip of sheet iron about two feet wide.

About three hours a week are given to regular gymnastic exercises. This consists of ordinary indoor gymnasium exercises, with occasionally some games. These are all under the supervision of a Turnlehrer, or teacher of gymnastics. A considerable portion of the physical exercises consists of regular military "setting up" exercises. It always seemed to me when watching the drills as though much better results might be obtained by giving pupils a chance for free exercises and games. The military drills may be suited to training men as soldiers, but seem scarcely suitable for small boys and girls. Our football, baseball, tennis, field-day contests, etc., would, I am confident, give more animation and vigour to

the German boys, overburdened as they are by long hours of mental labour.

The number of hours of actual class-room work exacted of gymnasial and other secondary-school instructors is so small that preparation for it ought to be much better than usually is possible with high-school teachers. I find from an examination of many gymnasial programmes that the average number of hours of actual class-room work required of each instructor is only from seventeen to eighteen hours per week. This is an average of about three hours daily, including Saturday. The Prussian regulations prescribe from twenty-two to twenty-four hours weekly for professors and head teachers, while teachers of technical subjects and elementary teachers have from twenty-four to twenty-eight hours. In Saxony the director of a gymnasium need not teach more than four hours a week, while a real-school director need not teach more than sixteen hours. Other teachers have from twenty-four to twenty-eight hours. The maximum number for elementary teachers in Würtemberg is thirty hours, while the directors have from eight to ten. Seldom overcrowded with class-room work, they have ample time for thorough preparation. This is a feature worthy of more consideration in America. The high-school teachers who have from five to seven daily recitations cannot be expected to do as good work as when a smaller number of hours is required in the class room. Little of the German teacher's time is needed for discipline. All lessons are prepared by the pupils at home or in class, and they assemble only

for the class recitation. When a lesson is over, the teacher is respectfully bowed out by the class standing at attention. He goes immediately to the large teachers' room, which is found in every secondary school. There he may read current pedagogical literature, of which an abundance is supplied, consult the ample library, or prepare his next lesson. This relieves him of much of the strain of "keeping order." Then, too, the inherent and constantly re-enforced idea of implicit, unquestioning obedience to authority is so strong in German boys that the teacher needs to expend little energy in maintaining discipline.* All these facts tend to lighten the teacher's burden, and to leave him more energy available for the preparation of lessons, for vigorous instruction, and for general advancement.

* Some one has wittily said that in Europe "children obey their parents, the wife obeys her husband, the husband obeys the king, the king obeys God."

CHAPTER II.

TEACHERS.

1. EXAMINATION AND CERTIFICATION.

THE teaching force employed in German schools is always selected with great care. None but those thoroughly qualified by scholarship and demonstrated teaching capabilities are ever employed as regular teachers. The high standard of qualifications of teachers is a just source of pride to Germany. The difficulty with which positions are secured insures a thoroughly trained body of teachers. Many of the instructors are men who have secured their doctorate from the university. Without exception the secondary school teachers are men, and one may see among their numbers many who have grown hoary-headed in the service. When visiting schools, it was with some degree of diffidence that I explained to the teachers that I, a young man, had been a school director (principal) in America. In Germany, young men would not be intrusted with so important a position; they must all serve a long term of years in the lower ranks before aspiring to become directors of others. Only the few ever attain this coveted position.

In university cities it is not infrequent to find the director enrolled as professor in the university

faculty as lecturer on pedagogics. Some of his best assistants may also be private docents in the university. This is especially true where a pedagogical seminary is maintained in connection with the university. Teachers of religion are frequently ministers or candidates for the ministry.

University diplomas are not accepted as credentials for teaching, as normal school and university diplomas so commonly are in America. All must take the state examination, regardless of their previous preparation. Sometimes the doctorate dissertation is taken as a part of the written work. To give a more definite idea of the preparation required of candidates, a few notes are given from the numerous regulations (thirty pages) governing the certification of teachers in Saxony.* There are only slight variations in the other states of the empire, and hence the following regulations are typical of the whole of Germany. The general regulations apply to candidates for positions in any of the public secondary schools, and also to those private institutions which aim to cover the same ground as the public schools. All candidates must be residents of Saxony. In addition to holding a full course certificate from one of the secondary schools, they must have done three years' work in German universities, one semester of which must have been in Leipzig, unless the candidate has been engaged in some public service in Saxony.† Special deviations from this may be granted only by

* Ordnung der Prüfung für das höhere Schulamt.

† Similarly, in other states resident study in one of their own universities is required.

the Minister of Education. He is empowered to grant special concessions only in case the candidate has spent three or more years in some German university. The leaving certificate (*Reife Zeugniss*) from a gymnasium is required of all candidates, except those who wish to teach mathematics, modern languages, or natural science. For teachers of these subjects the certificate from a real-gymnasium or a higher real-school serves the same purpose. Study of modern languages abroad may be accredited for a part of the required university residence. In the United States, candidates for teaching are seldom asked many questions, except those of a scholastic nature. But in Germany one's entire genealogy must be rehearsed in great detail, and conclusive evidence of irreproachable conduct and morality must be given. Candidates who wish permission to take the examinations must announce themselves some time in advance. This request must be accompanied by the diploma from the secondary school, the *Abgangszeugniss* (or leaving permit from the university) and the *Lebenslauf* (course of life), including testimonials from the mayor of their town or their pastor. They must state their complete names, date and place of birth, religion, occupation of father, give an outline of their school training, their courses of university training, state their preparation for teaching languages, and the course of reading already pursued. If the candidate has been an assistant in a university, or a member of a seminary, or has attended different universities, all these facts should be stated. The biography is to be written in Latin by candidates

for teaching ancient languages, and by candidates for teaching modern languages in one of those languages. In other courses it is accepted in German.

The aim of the examination itself is (1) to determine the candidate's general professional fitness, and (2) to determine his fitness for teaching special branches. The first qualifications are determined by examinations in philosophy and pedagogy, German language and literature, and religion. The second qualifications are tested by an examination in the branches selected by the candidate for his chosen line of work. Three grades of position are recognised in the secondary schools, and each grade has its corresponding special examinations. The lowest grade of work includes Sexta, Quinta, and Quarta; the middle grade includes the next three classes; and the highest includes the last three years of the nine-year courses. For positions in Greek, Latin, physics, chemistry, and mineralogy only two grades are given, inasmuch as all these branches, except Greek and Latin, are taught only in the middle and higher classes. Latin is begun in Sexta and Greek in Quarta, but for these basal studies only teachers having very extended special training in them are employed. All teachers are required to take the examination in philosophical propædæutics. Thus only those with professional insight, as well as specialized knowledge, may give instruction in the secondary schools.

Two classes or grades of certificate are issued—those for the grade of ordinary teacher (*Lehrer*) and those for the grade of head teacher (*Oberlehrer*). To

obtain a teacher's certificate, in addition to the general requirements, the examination must demonstrate capability of instructing the middle classes (L. III, U. III, L. II) * in two selected major subjects, and in the lower classes (VI, V, IV) in two correlated minors selected from the same group as the major.

The head teacher's (*Oberlehrer*) certificate is the highest, and in order to obtain it the candidate must show that he is able to instruct the three upper classes (U. II, L. I, and U. I) in two selected majors and the three middle classes in two closely related minors. In place of the two minors a third major for the upper class instruction may be selected.

Two groups of subjects are recognised from which the selections are to be made: (a) the language historical group, and (b) the mathematical scientific group. The subjects coming under the groups are as follows:

GROUP "A."		GROUP "B."	
German,	French,	Mathematics,	Mineralogy,
Latin,	English,	Physics,	Botany,
Greek,	History,	Chemistry,	Zoology.
Geography.			

Philosophical propædeutics is a required subject for all candidates. Should Latin be chosen as one of the major subjects, geography must be taken as a minor. If French or English is taken as major, Latin must be a minor. Hebrew may be taken as a major only by candidates for an instructorship in religion.

* See explanation of these classifications on page 35.

The examinations are conducted by two methods—oral and written. The written examination precedes the oral, and its successful completion is a prerequisite for admission to the oral. The written examination differs markedly from those in vogue in the United States. Instead of answering a fixed set of ten or more questions, an “Aufgabe,” or form of thesis, is prescribed for each of the subjects or for a combination of allied subjects. Such branches as history and geography, mathematics and physics, or language and history may be combined. No one is to be given more than three written dissertations to prepare. One of these must be on the philosophical pedagogical topic. For the preparation of each paper a period of six weeks is given. By special permission more time may be given. (I understand that a second six weeks is usually required. Hence, to prepare three dissertations, about a year may be necessary.) The candidate is required by “*Handschlagen*” (handshaking; equivalent to taking oath) to satisfy the committee that the work has been done independently. All aids in the way of books and periodicals must be stated in the thesis. In classical philology the thesis must be written in Latin; in modern foreign languages it must be written in the language which the examination represents (French or English). Theses in other subjects are written in German.

Following the acceptance of the written work, and preceding the oral examination, a trial lesson in the major subject must be planned and presented to a class in presence of the examining committee. This

trial over satisfactorily, the candidate is admitted to the final ordeal. The length of the test varies with the position sought. It occupies an hour in each of the branches if for a position in the upper classes, three quarters of an hour for the middle classes, and half an hour for the lower classes.

Something of the scope and thoroughness of the examinations may be judged from the outline of the requirements in the following branches, which we will pass in review :

In philosophy and pedagogy all are to show a knowledge of the elements of logic and empirical psychology. They must understand the most important cosmological views, the general trend of the history of philosophy, and must have read at least one philosophical treatise. The principles of pedagogy and didactics must be familiar, and also the most important facts concerning pedagogical development since the sixteenth century. If the candidate is to instruct in philosophical propædeutics, he must show a clear insight into the most important philosophical systems and be able to give a clear, connected discussion of philosophical questions.

The examination in mathematics includes (1) for the lowest class certificate a knowledge of plane and solid geometry, trigonometry, universal arithmetic including logarithms, algebra including linear, quadratic and diophantic equations, as well as the necessary acquaintance with the properties of numbers sufficient for ordinary arithmetical calculations (2) For the middle class there is required a knowledge of the elements of analytic and projective geometry,

theory of algebraic equations, higher analysis, and fundamentals of differential and integral calculus. (3) For the highest class the candidate must understand so thoroughly the important parts of higher geometry, higher analysis, and universal arithmetic that he can work out independently a moderately difficult theme in any of these lines.

The English examination includes (1) for the middle class (it not being taught in lower classes) an essentially correct translation of some selection of moderately difficult German into English, as the written part of the examination. The oral examination must demonstrate a reasonably sure knowledge of grammatical rules and of word values sufficient for class instruction. Synonyms must be fairly well distinguished. A knowledge of the development of English literature must be shown, and some standard works of English authors must have been read with understanding. Essential rules of versification must be known, and some fluency in the use of the language must be possessed. (2) To obtain a certificate for upper class work, both oral and written work must exhibit not only grammatical correctness but easy control of expression. Knowledge of grammar, etymology, and syntax must be scientifically understood. The chief facts of scientific grammar must be so well mastered that grammatical forms, sounds, and etymological development of modern English can be scientifically explained. A moderately difficult selection from Anglo-Saxon or Old English must be translated and explained. Laws of versification of Old English and Modern English must be understood. Finally, a

correct knowledge of the development of all English literature must be demonstrated, as well as proof of having read with critical understanding some works of the prominent authors since the sixteenth century.

The requirements in French are so similar to those in English that they may be omitted from this discussion.

To give instruction in Latin (1) in the lower classes there is demanded exact knowledge of elementary grammar and ability in its application. The easier prose and poetical works, as Cæsar's *Commentaries*, some of Cicero's *Orations*, and Ovid's *Metamorphoses*, must have been read in the original. Selections from these works are to be read and translated in the examination. This part of the work must show readiness and exactness in translation, understanding of versification, syntactical and sentential structure, and correct word valuation. (2) In addition to this there must be for the middle classes an appreciation of the difference between German and Latin modes of expression and the capability of handling independently certain themes relating to classical antiquity. The reading includes selections from Cæsar, Sallust, difficult portions of Livy, Cicero, Vergil (at least the *Æneid*), the most significant odes and satires of Horace, and the elegies of Tibullus and Ovid.

It will be remembered that Greek instruction begins in Quarta, and hence there is no "lower class" instruction recognised. For the middle grade the examination includes general grammar, knowledge of Homeric etymology, and also the difference between

Ionic and Attic dialects. The written translation of moderately easy Latin or German into Greek should be done with facility. The reading includes Homer, Herodotus, Xenophon's *Anabasis*, *Memorabilia*, and *Hellenica*, Orations of Lysias, the shorter political speeches of Demosthenes, Plato's *Apology*, and the *Crito*.

In both Latin and Greek the candidate must be so familiar with the authors that he can make satisfactory critiques of the contents and character of what he reads. Selected passages of moderate difficulty must be readily and exactly translated, the style criticised, synonyms differentiated, and the entire passages clearly explained. The laws of dactylic hexameter and pentameter must be well understood; the lives and works of the given authors must have been carefully studied; an acquaintance with mythology is demanded; and an acquaintance with aids and means of studying classical literature, history, and mythology, sufficient for independent investigation, must be demonstrated.

To instruct in the higher classes a thorough knowledge of philologic criticism is required. In this they are expected to be as proficient as instructors in our colleges. Not only must they be able to read and translate, but they must be acquainted with the sources from which the school texts are compiled, and be able to give critical judgment upon the texts. The candidates must be able to speak and write Latin easily and correctly, and at least to write Greek correctly. A completely correlated knowledge of the language, literature, history, art, mythology, etc., of

the Greeks and Romans is demanded. Besides this, in the philosophical examination the acquaintance with Greek and Roman philosophy must be shown to be sufficient to explain fully the authors read in the gymnasium.

Without going into details concerning the qualifications required for teachers of the mother tongue it will suffice to say that no mere ability to recite grammatical or rhetorical rules, nor a simple smattering of literature, is deemed sufficient. No dilettanteism is allowed. Nothing short of a thoroughly critical knowledge of the linguistic science of the language and the ability to make scholarly literary criticism will be accepted. The historical development of the language must have been studied, and also that of the languages from which it has been derived. Gothic, Old High German, and Middle High German must be easily read and understood, and some acquaintance with their literature must have been acquired.

No one is permitted to give instruction in the upper classes if the work in German and the oral examination in philosophy indicate that general scientific questions cannot be discussed with philosophical insight and in a lucid manner.

All teachers of religion must show thorough acquaintance with the Scriptures and the creeds which they represent, biblical history, and the history of the Church. For the upper classes, the ability to read the Scriptures in the original is required, as well as ability to handle all questions in a thoroughly philosophical manner.

To teach physics there is demanded (1) in the middle classes a general knowledge of the most important phenomena and their laws, and also the ability to demonstrate the laws mathematically, in so far as it is possible without a knowledge of higher mathematics (i. e., not beyond trigonometry and elementary analytic geometry). (2) For the upper classes, there is required, additional to the above, mathematical physics and a more exact knowledge of the fundamental mathematical and physical investigations in the more important portions of theoretical physics. For either class of certificate a facility in experimentation and manipulation of apparatus is required.

The examination in chemistry must exhibit (1), if for the middle class certificate, a knowledge of the general laws of chemical action; an acquaintance with the most frequently recurring elements, their properties, and their compounds; a knowledge of chemical technology and sufficient practice in conducting ordinary school experiments. (2) For the upper classes considerably wider knowledge is required. It includes, besides a more thorough knowledge of inorganic chemistry, the general theory of the constitution of organic compounds, familiarity with the most important groups of organic compounds and the single compounds, necessary to an understanding of physiological phenomena and chemical technique. The candidate must also show that he is able to arrange instructional experiments easily, and must exhibit complete certainty in qualitative analysis and some familiarity with quantitative work.

In botany, the examination for (1) the lower classes

covers a knowledge of the most important native and foreign plants, as well as their individual organs, and the ability to classify according to the Linnæan system. (2) For the middle classes there is required in addition the natural system, an acquaintance with structure and life phenomena. To instruct in any class, the examination must reveal close acquaintance with anatomical-physical relations, the theory of evolution, principles of systematic botany, and the laws of plant distribution. No "higher class" certificate is issued, since botany is completed in the middle grades.

The demands in zoology are quite parallel to those in botany, and hence a detailed account will be unnecessary. For all grades of instruction in either botany or zoology, the ability to draw plant and animal forms and tissues is required.

In history the examination covers (1) for the lowest classes geographical and chronological knowledge of the events of universal history, and especially "*vaterlandischen Geschichte*" (German history). A fair acquaintance with the literature of the subject is also demanded. (2) The examination for middle-class instruction covers, in addition, a thorough knowledge of Greek and Roman history, the fundamental principles of the government of Rome and the most important Grecian states, and also a more comprehensive knowledge of the developement of systems of government. Mediæval and modern German history, and especially Saxon and Prussian history, must be thoroughly understood. Besides more scientific and penetrating knowledge of the above

fields, there is demanded (3) for the upper classes the understanding of ways and means of investigating historical material from the original sources. The candidate must have worked out some phase of history from the original sources. An acquaintance with the most important sources and with the masterpieces of historical literature must be shown. Especial weight is placed upon the development of institutions, the main trend of the history of civilization, and above all upon a comprehensive idea of Greek and Roman antiquity and the mediæval and modern history of Germany.

2. OBSERVATIONS UPON THE QUALIFICATIONS FOR CERTIFICATION.

From the foregoing it must be admitted that the regulations and requirements in the examination of German school teachers are certainly very rigid. The examinations call for thorough and extended knowledge in all the branches that the candidate expects to teach. To instruct in the higher classes, an especially exhaustive knowledge of subjects is required. The teacher is not only expected to be master of the subject but also an authority on it. When compared with the qualifications exacted of average high-school teachers in America, they are found to be much higher in the upper classes and in some respects higher in the middle classes. But, as previously shown, it is not fair to compare the average high school with the best secondary schools in Germany. Only those with the full four-year courses should be included, and of these the senior classes

must be placed parallel with Upper Secunda. This leaves the last two classes of the gymnasia and other schools with nine-year courses to be compared with the freshman and sophomore classes in American colleges. When looked at in this light the difference is not so great as many have been led to suppose from a cursory examination of the systems.

The head teacher's certificate entitles the holder to teach in U. I, L. I, and U. II; that is, in classes which correspond to the senior year in the high school and the first two years in college. Should we compare the qualifications for the position of head teacher with those of high-school teachers, we should be forced to admit that the difference indicated in the requirements is very much in favour of the German teacher. The number of totally diverse subjects covered by the head teacher are not nearly so numerous as is usually required of the high-school teacher, but each department is much more exhaustively treated. In mathematics, for instance, trigonometry is required in only a few high schools, in fewer is analytical geometry required, and the calculus in almost none. Throughout the whole range of requirements in Germany, the rule is thorough investigation and mastery; while of our high-school teachers, it is extensive rather than intensive preparation that is expected.

Thus it appears that the pupils in Upper Secunda have much more thoroughly qualified teachers than the senior classes in most American high schools. Usually we make no distinction in qualifications required of teachers of the different grades in the high

school. The same teacher may teach either first-year or fourth-year classes. But, since L. I and U. I really correspond to college grades in America, we must discuss qualifications of teachers from that standpoint. Considered in this way, we shall find that the differences between the teachers of a given class of pupils in the two countries are not so great as many suppose.

In Germany, for the position of head teacher the doctor's degree is not required. In American colleges, also, it is not. A doctor's degree is important in the head teacher's position; in American colleges it is also very useful. In Germany the chief requirement is exhaustive knowledge of the subjects which the candidate expects to teach; in American colleges this holds true. In Germany this knowledge is tested by an examination; in American colleges previous acquirements are investigated. In Germany the doctorate is not accepted as a sufficient guarantee of ability to teach; in American colleges it usually is, without regard to professional training, other qualifications being satisfactory. In Germany only those who have a thorough knowledge of philosophy and pedagogy may occupy these positions; in America, unfortunately, training in these important directions is seldom a requisite for similar positions.

To make only a few special comparisons, we might take instructors of German in freshman and sophomore classes in American colleges and compare them with teachers of English and French in the upper classes of German secondary schools. Instructors of German are usually fully as competent as teachers

of English or French in the corresponding classes. Our mathematical instructors in the lower college classes are doubtless fully as well qualified as teachers in the upper gymnasial classes. The same would hold true in the sciences and history, and in a large measure in the classic languages. On the whole, there is a close correspondence between the scholarship demanded of a head teacher in Germany's secondary schools and that of a college instructor in America. Both are expected to be specialists in particular lines. The main differences lie in the method of examination and in the propædæutic knowledge required of the head teacher and the frequent lack of it on the part of the college instructor. But when we examine the qualifications of the instructors in our average high schools for the purpose of comparison with those of German gymnasial teachers, we find a very much greater difference. Whether we take scholastic preparation or professional training into account, we shall find the scales turning decidedly in favour of the German teachers.

The qualifications exacted of an ordinary teacher in the middle classes, or the three years corresponding to the first three years of our high schools, are much higher than are usually required of high-school teachers. The teacher is expected to go much more deeply into the subjects he teaches than the high-school teacher. For example, in mathematics the gymnasial instructor must possess a thorough knowledge of trigonometry, analytic and projective geometry, and differential and integral calculus, none of which are usually required of our high-school teachers.

In the best American high schools many instructors, perhaps most of them, do understand these branches, but a lack of them is not a legal disqualification. Thus in mathematics considerable superiority is required of the gymnasial teacher over the high-school teacher. In history, geography, and natural science, a formal statement of the requirements does not show an essential difference from those usual in America, the most noticeable variation being in the amount of local geography and history and the closer acquaintance with peoples of antiquity which are required in the German examinations. But when we remember that the German teacher necessarily has had training covering three years' university work, in addition to his gymnasial course (together an equivalent of five years' American college and university work), we can easily see that the actual attainments of the German teacher in these subjects are much higher than those usually secured in America. In the fields of modern history and geography we undoubtedly cover more than they.

The American high-school teacher is usually required to possess knowledge of a more diversified character than the gymnasial teacher. In Germany never more than four subjects are required, while in America often no less than a dozen are required in the examination, if not in the teaching work. This makes a vast amount of difference in favour of the gymnasial teacher, since he may begin his specialized work immediately after finishing the secondary school course. In the universities he is not limited in his selection of subjects and is required to get up only

three subjects for the doctorate. (These may be entirely unrelated subjects.) American high-school teachers usually have little time to specialize, because so many subjects must be prepared for examination. I refer here mainly to state-board examinations. In the larger city high schools we find, not infrequently, specialists who have devoted themselves to their chosen subjects both during their college course and subsequent to it. This is more the rule in the Eastern than in the Central and Western States. In certain cities the examinations are of a specialized character, or there are no examinations at all. Only those who are known to be specialists, either from their college credentials or from some special work accomplished, can secure positions. The days of the general "all-round" man, with no real mastery of anything, are becoming numbered. Even where the States grant licenses to teach in special departments, as German, Latin, music, or drawing, the examination is usually confined to those branches.

It is safe to say that the teachers of English in the German secondary schools are not, as a rule, so well prepared for that special branch as the teachers of German in our best high schools are for their specialty. The gymnasium teacher has usually devoted more attention to grammar, the scientific laws of the development of language, and to the laws of versification than the high-school teacher. The German instructor understands English well from the mechanical side—that is, as an acquired product—but it is always an artificial product. There is a lack of expression, a wretched pronunciation, and a

strained, awkward application of words and phrases which are inevitable without a living connection with the language. Most of them have never heard English spoken by an Englishman; they have learned their pronunciation from the dictionary or from a teacher who learned his pronunciation in that way.

From the very nature of things the advantages are with us. A large majority of teachers of German in our high schools and colleges (and lower schools where it is taught) are either of German birth or of German parentage, and have known the language from childhood. In many cases it is their first-learned language, and hence they are fully as conversant with it as with English. That German is not always well taught in American high schools is too true, but the defect is in the methods which teachers are so often obliged to pursue, and not in the capabilities of the teachers. A language must be taught as an instrument of thought and expression if best results are to be obtained. Mastery can not be gained by studying grammatical rules. (See discussion later under Modern Languages.)

That the gymnasial instructors are better prepared in the classics than high-school teachers is very evident. However, there a teacher of the classics is not expected to be prepared to teach every "ology" known to modern science. It could be easily shown that in the first two years of college we have as well prepared teachers of the classics as are to be found in the upper classes of the gymnasia.

One direction in which the Germans make heavy demands for all grades of secondary instruction is

that of philosophical pedagogy. As was seen from the outline of requirements, none are exempt from possessing thorough insight into the principles of empirical psychology, pedagogics, and the general trend of philosophical thought. This insures a class of teachers who can study educational problems philosophically, and who can apply the principles of psychology to all instruction. In the United States a few may be prepared in them, but the general rule is that high-school teachers, and even those who instruct freshmen and sophomores in college, are sadly deficient in these essentials. The requirement of philosophical-pedagogical grounding for the profession of teaching is highly essential, and the example that Germany sets us should be heeded. Other elements of preparation of teachers will be pointed out in the section on Training of Teachers.

On the whole, it seems apparent that the preparation of teachers in the secondary schools and the requirements exacted of them are very much higher than for teaching in our high schools. Although we have many teachers in our high schools who are splendidly equipped for their work, yet, as a body, our teachers are on a considerably lower level, if we may judge from required preparation. It is especially true that beginners in our schools start out with preparation much inferior to that demanded of teachers in German secondary schools. Many of our teachers acquire by experience and subsequent study high positions in the ranks of teachers; but the qualifications demanded for entrance upon the work

are so low that it is not surprising that the average attainments are not higher.

3. TRAINING OF TEACHERS.

(A) *Introductory.*

That something besides a knowledge of facts and acquaintance with subjects is necessary to the art of teaching is well recognised in Germany and is constantly gaining more emphasis. Not even the scholar with his doctor's diploma, who is recognised as having gained the power of independent research, is allowed to go into the schools to attempt untried methods of training youthful minds. He may have become ever so skilful in his special department of investigation, but this is not accepted as a training which insures universal perfection in all arts. Neither do they accept without qualification the old adage that "teachers are born, not made"; all, however well adapted they may think themselves to be, must partake of those special forms of instruction and training that are deemed of special value in preparing to teach and train the young. As a first requisite in attempting to train human beings to a complete and symmetrical development there ought to be a knowledge of the human being, and especially of that subtle something we call mind. Besides a knowledge of mental phenomena and the laws of mental growth and development, the emotions, and the will, which by many psychologists are placed above the intellect in importance, must be understood. Beings are not alone to be filled with knowl-

edge, but their moral natures are to be studied, cared for, and developed into impulses and desires that shall guide the physical and intellectual natures to higher and nobler actions. In order to arrive at sound pedagogical conclusions it is not safe to depend altogether upon the momentary decisions regarding important questions relating to mental and moral life; hence a study of psychology, ethics, and school management, guided and supported by historical experiences, is fundamental in the teacher's equipment. Upon these assumptions the Germans base their requirements for entering this highest of callings. The examination, which is the first test to which candidates are subjected, is to determine whether a sufficient knowledge of the chosen subjects and their relations to the whole of knowledge has been mastered, and also to determine whether the strictly professional subjects have been learned thoroughly enough to give a broad scientific view of man and the laws of his development. Thus, although the subjects which the candidate expects to teach may be of his own choosing, the strictly professional subjects of psychology, pedagogy, and philosophy are obligatory upon all alike. A philosophical world-view is necessary to soundness of judgment and balance of mind. This is to be gained from a study of systems of philosophy and pedagogy (which, in a strict sense, are a history of the development of thought), both current systems and those that have influenced the course of history.

But the examination is only the first step. Although a candidate passes this creditably, or even

with highest honours, he is not allowed in most parts of Germany to enter upon the duties of teaching in a permanent position without first taking a course of training which shall, on the one hand, add to his theoretical insight, and, on the other hand, afford him practice under guidance, by means of which he may exhibit his power of and adaptation for teaching. Teachers in the people's schools usually receive a course of training in seminaries or normal schools, where the work of academic instruction is carried on simultaneously with theoretical and practical professional instruction. A part of the secondary teachers are trained in the normal schools, but the number is decreasing, and the university-trained teacher occupies a much higher position socially and professionally, and receives a considerably larger salary than the one who is normal-trained (see Table of Salaries).

(B) *Establishment of Seminaries.*

After candidates have passed their first examination, before receiving a regular appointment as teachers in the schools, in a large part of Germany they are obliged to spend a certain amount of time in obtaining practical preparation for their calling. In this respect it will be seen from what follows that requirements of various states are not entirely uniform. Usually this preparatory period covers two years, and is divided into a seminary year (*Seminarjahr*) and a following trial year (*Probejahr*). I am told by teachers in the schools that although this is theoretically true, nevertheless, in practice, espe-

cially in Saxony, candidates are often received into the schools as regular (salaried, but not permanent) assistants without taking either the seminary year or the trial year. This is more frequently the case when the number of candidates is small and positions are sufficiently numerous. When conditions are reversed they can not so easily secure an appointment.

Prussia requires all teachers to be seminary trained, and has provided a sufficient number of institutions to accommodate all. There are at present in Prussia eleven older school seminaries, thirty-five gymnasium seminaries, and university seminaries at Göttingen and Münster.*

In Saxony there are no laws regulating the organization of seminaries in general, but, however, they are contemplated. The University of Leipsic (later described) has one of the best developed systems of seminary work in Germany. The Royal Gymnasium has a seminary, connected on the one side with the

* The older school seminaries in Prussia are situated at the following places, viz.: Berlin, Stettin, Königsberg, Breslau, Göttingen, Magdeburg, Dantzic, Posen, Cassel, Coblenz, Münster. The thirty-five gymnasial seminaries are distributed as follows: East Prussia—Königsberg, Gumbinnen; West Prussia—Dantzic, Brandenburg, Berlin (four), Prenzlau, Frankfort, Lauenburg, Posen, Bromberg; Silesia—Breslau, Liegnitz; Saxony—Burg, Wernigerode, Halle; Schleswig-Holstein—Flensburg, Altona; Hanover—Hanover, Goslar, Leer (two); Westphalia, Arnsburg, Warburg, Iserlohn; Hesse-Nassau—Wielburg, Wiesbaden, Frankfort, Klingenschule; Rhine Provinces—Gladbach (two), Cologne, Bremen, Düsseldorf (two). (From Baumeister's Handbuch, xxi, p. 72; article by Fries.)

gymnasium and on the other with the university. Probably this form of seminary as a preparation for the work of teaching in the secondary schools is unexcelled. All other forms of seminary have some conspicuous lack, the main defect in them being the lack of opportunity for combining higher university study and theoretical consideration of subjects with the practical work of the teacher.*

Bavaria as yet has no definite laws relating to the establishment of pedagogical seminaries, but there is being made a practical test to determine their efficiency. The first seminaries were provisionally opened in 1893 in Munich, Würzburg, and Erlangen. In 1894 two more, one in Neuberg and another in Regensburg, were started.

The examination commissions already make a difference in favour of those candidates who have attended pedagogical lectures, over those who are simply qualified in the branches of knowledge in their chosen department. If the candidates have had practical preparation additional, they are not required to attend a pedagogical seminary but may demonstrate their professional abilities in some suitable school in Munich.

In Würtemberg there are no laws requiring teachers to be seminary trained, but a seminary has grown up in the University of Tübingen. Lectures in pedagogy are often delivered there, but, however, they are of the purely theoretical sort, and deal little with the practical aspects of the teacher's profession. The philological seminary attempts something in the

* Fries, *Die Vorbildung der Lehrer für das Lehramt*, p. 192.

way of offering practical exercises in that particular line of instruction.*

There are at present three pedagogical seminaries in Hesse: one long established in Giessen (1876), under the leadership of the well-known writer on pedagogy, H. Schiller, a second at Worms (1889), and a third in Darmstadt (1890). Only those candidates are taken who have passed the State examination for positions in the secondary schools.

(C) *The Workings of the Pedagogical Seminaries.*

To meet the demands for the professional training of secondary school teachers, four forms of institutions have arisen. They are (1) the normal schools (*Lehrer-seminarien*), (2) the gymnasial seminaries, (3) seminaries in connection with elementary schools, and (4) those in connection with the universities.

The normal schools are mainly devoted to training teachers for the elementary schools, and need not be described here. Those older seminaries in connection with schools, because of their historical priority and importance, will be treated from that point of view, and one noted example, that at Giessen, will be briefly described in its present workings. The gymnasial seminary will be outlined in connection with the Prussian regulations governing the training of all secondary-school teachers, which will give a fair type of the training received in gymnasial seminaries throughout Germany.

* Fries, *Die Vorbildung der Lehrer für das Lehramt*, p. 76.

I. OLDER SEMINARIES IN CONNECTION WITH SCHOOLS.

The earliest seminary for teachers was the historical "Seminarium Præceptorum" in Halle, which was founded in 1696 by the renowned A. H. Francke. This school attempted thorough instruction in academic branches, theory of education, observation of school organization and methods, and practice in applying principles. Its avowed purpose was to fit for greater usefulness those who expected to teach. Although the seminarium was poorly organized, considered from modern standpoints, yet it had a wide circle of usefulness at that time and is of great interest still, inasmuch as it was the initial step in the great movement toward a professional preparation of teachers, and as it resulted in the modern normal school (whose functions, in Germany, are becoming more and more relegated to the realm of training elementary teachers), the university pedagogical seminary, and the latest development, the seminary in connection with the secondary schools, especially those in connection with the gymnasium.

As particularly interesting examples of important seminaries in connection with schools may be mentioned the ones in Berlin, Stettin, Göttingen, Giessen, and Weimar. By the seminaries in connection with schools, I mean those distinguished from the gymnasial seminaries, which are in connection with secondary schools only. Since this treatment is not historical, it will not be necessary to trace the detailed development of the foregoing seminaries,

but only the present working of one, that at Giessen, will be briefly described.

In Giessen the members assemble weekly for discussion of theory. They visit classes and subsequently undertake instruction under conditions similar to those in connection with other seminaries later described. The candidates begin instruction in the Vorschule and then gradually ascend to the gymnasium classes, up to Secunda. This is to give candidates a well-ordered and developed knowledge of the instruction in their respective branches.

Besides this, Schiller, the director, undertakes departmental discussion of subjects to connect with the university study of the same branches. He also delivers pedagogical lectures in the university of which he is professor. During the seminary course a pedagogical thesis is required of each candidate.

The following subjects for theses are selected from some given by Schiller in Giessen (*Pädagogische Seminarien*, p. 138): The value of historical poems in historical instruction. Instruction in physics in the lower grades. Geometrical (*Anschauungs*) instruction. The first mathematical instruction in Lower Tertia. Concentration in language, historical, and geographical instruction in Quarta.

Fries quotes the following from Muff, which he considers especially fit ones:

The method of Latin instruction in Sexta, with special consideration of Perth's proposal for reform.

Method of instruction in geometry in Quarta, with special consideration of Reishaus's Vorschule der Geometrie.

How shall historical instruction be conducted so that pupils will not only be receptive but will co-operate in the work?

Concentration of the instruction in Lower Tertia according to the new course of studies.

Instruction in German in Lower Tertia as given in Muff's new reading book.

How is descriptive natural science in the lower classes to be made *anschaulich* (objective)?

Sometimes themes are given which bear more directly upon particular branches which the candidate is preparing to teach. These are examples: May the history of the earth and the earth's crust be adequately considered in a half-year's course (as was required in the former outline of studies)? What Anschauungs-material must be made use of in the various grades of school? How shall the forty disposable hours be divided? Discuss the concentration of ancient languages and ancient history instruction. Discuss the teaching of ancient languages and history in Quarta as to selection of material and to methods of instruction. The reading exercise as the central point of modern language instruction. What demands do the exponents of phonetics make in the preliminary instruction in French and how far may these be complied with? Discuss natural science instruction in Upper Tertia of the realistic schools according to the old and to the new courses of study. Discuss the translation of German into ancient languages. The treatment of poetry in instruction in German in Tertia. The nature of artificial, judicious, and mechanical memories are to be discussed,

and in connection with the discussion a definite selection of memory material is to be examined.

II. GYMNASIAL SEMINARIES—PRUSSIAN REGULATIONS GOVERNING THE TRAINING OF TEACHERS.

The last form of teacher's seminary developed was the one in connection with the gymnasia. It is the most specifically differentiated of all the seminaries, and consequently the most thoroughly organized for a specific function. It is for secondary teachers alone, and makes its conditions for admission very rigid. It arose from the necessities of a more intimate connection between theoretical training and actual practice in instruction and school management. Between theoretical study and practice under unnatural conditions offered by normal schools and the actualities of school work, many German educators believe there exists too great a gap. To train best the teacher to be, after mastering the academic work offered in the universities, he must study theory and practice amidst the usual conditions which he will meet when he takes charge of a school for himself. That is, the practice work must not only be carefully planned and criticized, but it must be executed under natural conditions, and in the same grades of classes and in the same subjects as the student will afterward teach, and not under purely artificial conditions.

It was this enlightened conception of what practice teaching should be that gave rise to the gymnasial seminary.

Below are given the main requirements of Prussia,

as published in the enactment of March 15, 1890,* governing the training of all its secondary-school teachers. As thirty-five of the forty-eight Prussian seminaries are gymnasial, this required training is largely secured in that class of institutions, and it may be taken as a fair type of the work offered in gymnasial seminaries throughout Germany.

The required training must cover two years of preparation, the first called the seminary year (*Seminarjahr*) and the second the trial year (*Probejahr*).

The seminary year must be passed in some pedagogical seminary or in a seminary connected with some of the secondary schools having a nine years' course and, if possible, a *Vorschule*. During this time the candidate is to become acquainted with the problems of instruction and education and their application in secondary schools, and to become specially well acquainted with methods of instruction in the individual branches.

The trial year is usually to be passed in some other institution than the one in which the seminary year was passed. During this year the candidate is expected to exhibit the powers of independent instruction that he is supposed to have gained in the seminary year.

Seminary Year.—Candidates are received into the seminaries from any part of Germany, though in case of overcrowding preference is given to residents of Prussia. Usually not more than six candidates at a time are received in the institutions which

*Ordnung der praktischen Ausbildung der Kandidaten für das Lehramt an den höheren Schulen, 1890.

are not regular seminaries. All of the seminaries are under the jurisdiction of the provincial school board.

Before the practical part of the candidate's training is begun he is expected to study theoretically the problems he will have to deal with. This theoretical training consists of discussions relating to carefully prepared pedagogical questions. These are selected by the director and discussed with him, and may be drawn from "the most important principles of the theory of instruction and education and their application to higher schools, especially in the course of instruction represented by the chief subjects selected by the candidate; also an historical study of the important disciples of the newer pedagogy (since the beginning of the sixteenth century)."

Rules for preparation for the instruction hour, judgment concerning observation of lessons given by candidates, fundamentals of discipline, when possible in connection with individual cases, etc., are to be discussed. Short discussions are to be prepared upon topics relating to the technique of pedagogics and the school. These may be selected from particular points in the general course of studies, examination regulations, the transactions of the Prussian Directors' Conferences, the officially published special courses of study for secondary schools, or from important newly published writings in the domain of pedagogy. Important methods, helps to instruction, apparatus, or principles of hygiene, etc., often furnish themes for discussion.

Three months before the close of the seminary

year each candidate is required to prepare a thesis upon some concrete pedagogical or didactic subject selected by the director.

In connection with the above theoretical work each candidate must take part in the practical work of the seminary. This consists of visitation of the classes taught by the director and other designated teachers, and in teaching a certain number of hours weekly, usually two. The teaching is done in the presence of the director and others who are commissioned by him to observe, usually the department teachers and some of the candidates. The teaching work is not given to candidates until the second quarter of the year, and is at first limited to short exercises, which are gradually extended. These lessons are carefully prepared, and after being given they are thoroughly discussed from theoretical and practical pedagogical standpoints.

Candidates are expected to visit other schools in the vicinity when their time is not otherwise occupied by work in the seminary school. School apparatus and helps are to become familiar to them, especially the apparatus and appliances in natural science and geography. They are to take part in conducting work hours of pupils, and also play hours, especially the turner's (physical training) exercise.

The regular department teacher reports monthly to the director his opinion of the candidate's work. Four weeks before the close of the seminary year the director submits to the provincial school board (*Schulkollegium*) a report concerning the work of each candidate for the seminary year. This report

must discuss the diligence and capabilities of the student, his actual accomplishments and natural aptitude for teaching, as well as faults and failures that may have been noticed. This report, accompanied by the thesis above mentioned, forms the basis for determining whether the candidate may be admitted by the provincial school board to the trial year.

Trial Year.—During the trial year each student is required to give from eight to ten hours of instruction weekly under guidance of the director and the department teacher. As in the seminary year, all lessons must be carefully planned and discussed before given, and are afterward subject to criticism, based upon the manner in which the instruction was imparted. Besides these eight to ten hours, which are given without salary, the student may, if capable, and the organization permits, give additional instruction for which he receives pay. The whole number of hours of weekly instruction may not, however, exceed twenty. All the work is outlined and apportioned by the director, who requires a faithful and diligent performance of all duties assigned. The main part of the instruction falls within the candidate's chief subjects, though work is assigned in several branches and in more than one grade.

The department teacher is required to be present at all exercises offered by the candidate during the first quarter of the year. After that time, at least twice each month, it is obligatory for him to visit the recitations. However, at all times he must keep himself informed of the progress of the work,

and hold himself in readiness to check or counteract any wrong or fruitless work. He is to report periodically concerning the work of the candidates.

In addition to the teaching assigned, the candidate has outside duties similar to those expected of him in the seminary year. He is required to be present at the teachers' conferences, where he has full voice in discussing matters (when giving paid instruction), to visit certain designated classes, submit reports of pupil's work, attend the usual examinations, give reports of examinations, and such other work as comes within his sphere of teaching and is assigned to him. He may be given charge of special pupils, who are behind in their studies or who need individual guidance. At the close of the year each candidate must prepare a written report and estimate of the work that he has accomplished. This, together with the report of the director, which is based upon his own observations and the reports of the department teacher, is submitted to the provincial school board for consideration. If the success in the seminary year and the trial year has been satisfactory, and a thesis of a sufficiently scholarly character has been presented, the school board may issue a certificate permitting the candidate to teach in any position indicated by the results of his first examination, which determines the subjects and the grade of positions.

In special cases, persons may be assigned to positions without having received the two years of practical training. This is true for ministers who wish to give instruction in religion.

III. UNIVERSITY SEMINARIES.

To meet the demand for a study of education based on a wider scientific knowledge, and especially a philosophical training, the university seminary was organized. The pioneer in this direction was the seminary organized in 1715, by J. M. Gessner, in the University of Göttingen. It was more especially devoted to a theoretical study of education, based upon historical pedagogy and philosophy. Such educators as Ratke, Comenius, and Locke were read, didactic theories were discussed, and rules for instruction were formulated. During the early existence of the seminary no practice work was attempted, but at a later date it came to occupy a permanent position in the university seminary. As other notable examples we may mention several university seminaries, nearly all of which have continued with widening influence and usefulness to the present day. J. S. Semler organized the one at Halle in 1765; Fr. A. Wiedeburg, at Helmstedt, 1779; Fr. H. Ch. Schwarz, at Heidelberg, 1809; Kiel, 1777; Brzoska, at Jena, 1832; Ziller, at Leipsic, 1861; and at last we mention the one at Königsberg, founded in 1809 by the great theorist, Herbart.

There are seven university seminaries in Germany, distributed as follows:

I. Giving theoretical instruction only—Göttingen.

II. Combining theory with practice:

(a) In connection with regularly organized gymnasia—Heidelberg, Leipsic, Münster, Tübingen, Freiburg.

(b) Having a model school of its own—Jena.*

The Seminary at Jena.—The pedagogical renown of Jena is world-wide. For the last three quarters of this century it has been the stronghold of the Herbartian school. The ablest exponents of Herbartian principles have there been active during the whole or a part of their educational careers. Brzóska, while in Königsberg, was influenced by Herbart along pedagogical and psychological lines, and was the first in Jena University to offer lectures on psychology and pedagogy. He announced practical courses in a practice school, but so few took part that he abandoned the project.

Graefe, a burgher-school director, attempted to carry out the same work, but also failed. The one to whom success came, however, was Dr. Stoy, who succeeded in building up a pedagogical seminary in 1843. Since then it has had almost continuous existence, † and Herbartian doctrines have been expounded by enthusiastic disciples of that great man; instruction based upon Herbartian principles has been exemplified in the practice schools, and men who have heard and seen at Jena have implanted the new doctrines in every civilized land. During the greater part of the seminary's existence the practice work has been in various grades of burgher

* The seminaries at Halle, Strasburg, Königsberg, and Kiel, which have been renowned, are all discontinued—the one at Strasburg since 1892. Though not regularly organized by law, Karlsruhe has a seminary patterned after the one at Heidelberg.

† Except from 1865 to 1874, when Dr. Stoy was in Heidelberg.

schools ; but since the successor of Stoy, Dr. Rein, has been in control, a gymnasium class has been added, so that all grades of primary and secondary instruction are represented. Since 1891, the seminary under Dr. Rein, and the one in connection with the royal gymnasium under Dr. Richter, have been united, Dr. Rein being in charge of the theory of instruction and education and its application in the practice school. Dr. Rein delivers lectures on theoretical and practical pedagogy, and those who attend these lectures may visit the practice school to observe instruction and to listen to the criticisms. Those who wish may also take charge of two or three lessons during a semester. Each lesson must be carefully planned by the student teacher, revised after criticism by the seminary teacher, and after the exercise is concluded the whole plan and execution are subjected to the criticism of the candidate himself, of the critic teacher, and of the student teachers who have observed the instruction. The leaders of this seminary strive not only to fit the candidates for their life-work, but they aim to build up a more solid science of pedagogy. The plan is thoroughly in accord with the modern laboratory methods of investigation in allied subjects.

For the practical course of instruction Professor Richter regards the following formal steps as indispensable: *Vorbild*, *Anleitung*, *Selbstübung*, *Kritik* (preparatory exposition, introduction, self practice, criticism). In addition to these there should not be lacking companions working toward similar ends in order to awaken a healthy spirit of rivalry for excel-

lence. As proper material for class instruction in the seminary work he selects, for the first work, German in Quarta. Following this, Greek in Lower Tertia is selected, and then work is assigned in Sexta. Later on in the course the candidates are left more to themselves for the selection of work. It, however, must be selected so as to be continuous with the work of the regular department teachers.

Each one of the classes (at present three burgher-school classes and one gymnasial class) has ten pupils. Besides the practice teachers, there are three regular department teachers who are responsible for the progress of the classes.

A few of Jena's variations from other Prussian seminaries, of special note, are summed up as follows by Professor Fries: * 1. Candidates visit the school museums and laboratories under competent guidance to obtain a knowledge of apparatus and appliances. 2. They are given for a certain period entire charge of a backward pupil, or of one who has for some other reasons failed to pass his examinations. 3. Under a competent drawing teacher they receive instruction in perspective and map drawing to insure capability of rapid sketching on the blackboard before a class. They lay great stress on making the instruction "anschaulich." † 4. In certain cases the seminary year is allowed to count as one year of the trial year (*Probejahr*).

* Vorbildung für das höhere Lehramt.

† That is, made plain to the senses through drawings and objective teaching.

The Seminary at Leipsic.—Leipsic, though not the first to establish pedagogical courses, has been during the last twenty-five years one of the most active pedagogical centres. For some years, during the labours of Masius and Ziller, it was thoroughly Herbartian. Not only did these men herald Herbartian pedagogy, but Professor Drobisch, who lectured on philosophy, was one of the best and ablest supporters of Herbartian psychology and philosophy; Prof. Ludwig Strümpell, a disciple of Herbart, was for some time lecturer on pedagogy. He was a pioneer in the attempt to place pedagogy upon a psychological basis. His book on psychological pedagogy is a masterful attempt to place pedagogy upon a sound foundation. In a supplement it contains one of the first, if not the first, attempts at a systematic study of children. The contribution antedates Preyer's, and is frequently referred to in Preyer's epoch-making treatise.

Probably the most noted of all Leipsic pedagogues was, however, Prof. Tuiskon Ziller. His seminary, a private institution, was grounded, like the one at Jena, upon the Herbartian pedagogy. His field of investigation covered elementary as well as higher education. His seminary, divided into the "*Theoreticum, Praktikum, and Konferenz,*" did much to extend Herbartian pedagogics. He laboured faithfully in this field from 1861 until his death in 1882.

At the present time Leipsic gives more courses in pedagogy and allied topics than any other German university. Its professors are not disciples of any particular school, but are thoroughly eclectic in their

system of instruction. Prof. Johannes Volkelt, a highly gifted man and a writer of considerable note in the field of philosophy and æsthetics, is head professor in the department of pedagogy. During one semester of each year he lectures on pedagogy, and during the other semester on æsthetics. Besides these lectures he gives short courses upon particular periods of philosophy. He conducts a philosophical-pedagogical seminary one evening each week during one semester and a seminary on selected topics in æsthetics during the second semester. His popularity draws large crowds to his lecture rooms and his seminaries.

Two pedagogical seminaries at Leipsic offer abundant opportunities for observation, criticism, and practice work in teaching. One, under the leadership of Professor Hoffman, a theologian, who has been connected with the university many years, is more especially adapted to the needs of future teachers in the burgher schools. The course consists of observational work and a chance to teach under guidance in all grades of schools. Under leadership of the professor, students visit once each week some grade of school. The visits include the district schools (*Bezirksschulen*), burgher schools, higher burgher schools, gymnasia, institutions for the blind, schools for the deaf and dumb, schools for weak-minded children, schools for incorrigibles, business schools, and technical schools. The student may also extend his visits to such other schools as interest him specially. For those who are sufficiently grounded in pedagogics, arrangements are made whereby can-

didates may conduct classes. This is done under guidance and criticism. After carefully planned work the candidate conducts the class under the supervision of the regular teacher and selected critics. The lesson is then thoroughly discussed in all its relations, and after a time it is repeated in another parallel class. In this way each one may become acquainted with the theories regarding the work, become a critical observer, and, lastly, learn to apply the principles learned.

In the lower grades the chief stress is laid upon the formal part of instruction, in the middle stage the form and content are to be dealt with more together, and in the higher classes the content of the lesson is to receive the chief stress. The seminary is more especially designed for future candidates for position in the burgher schools.

Another seminary at Leipsic in connection with the Royal Gymnasium is designated by the Saxon kingdom as a practical seminary for candidates of the higher (secondary) schools. The seminary is under the supervision of the gymnasium director (Prof. Dr. Richter), who also has the rank and title of assistant professor in the university. He delivers some lectures in the university. As assistants, there must be two other gymnasial teachers to supervise the work in their particular departments. The seminary is so conducted that three divisions are made according to subjects. The three groups usually represented are ancient languages, under the director; modern languages under the direction of Dr. Martin Hartmann; and mathematics and natural

science, under the guidance of Prof. Dr. Lehmann. The exercises of the seminary consist of model lessons, the first lesson of each semester being given by the teacher in charge, and the rest by the students (*Praktikanten*). The students are not compelled to give lessons, but it is to their advantage to do so, since the report of their work is to be handed to the Minister of Instruction to count on their seminary year, when they come to apply for a position. Only those students who have been in university attendance four or more semesters, or those who have pursued their special subjects for some years, are allowed to become active members of the seminary.* Others may be allowed to attend, but only as listeners (*Zuhörer*). In all cases students must receive permission from the director and the special department teachers. All members are expected to attend the regular meetings of their special division in the seminary, and are earnestly requested to visit the school work in their own and other departments.

After the first lesson in each semester the classes are placed in charge of the student teachers. They are at liberty to select a theme suitable for presentation in some one of the nine classes of the gymnasia, which they must announce to the department teacher for his approval. He avoids the duplication of lessons, either given by the regular teacher or in seminary meetings, and determines whether the

* This provision is made especially for people's school teachers who wish to pursue special branches, and thus become enabled to take examination for positions in the secondary schools.

selected theme is suitable for the class chosen by the student. The intention is to make the lesson profitable to the class which acts as a practice class. The theme determined upon, the student teacher must submit a completely detailed plan of the lesson to be presented ; not a mere outline is accepted, but the objects expected to be obtained, and the means of attaining them, the division into "introduction," "body of the lesson," "conclusion," "review," must all be indicated with great exactness. Even the questions that are to be put before the class are worked out beforehand. When the candidate appears before the class he is expected to be fully prepared at all points with the subject matter and method of his lesson. For example, in the case of instruction in modern foreign languages, the candidate not infrequently has his questions and sentences and illustrative lines all by heart. After the written report is handed in, the candidate has a conference with the department teacher concerning the proposed work. Errors of method are pointed out, the theoretical and practical pedagogical aspects are carefully considered, division and amount of work discussed, etc. After criticism, the candidate reviews and corrects the work before presentation to the class. Before giving the lesson the candidate is expected to visit the class he is to teach, and other parallel classes as many times as possible, to become better acquainted with the class and with the work to be given.

For practice classes, from eighteen to twenty-four pupils of the gymnasial class in which the instruc-

tion is to be given are selected by the department teacher. The instructors aim to select from the classes those of average ability, not taking the best, nor, on the other hand, the poorest. At one exercise which the writer witnessed, the rector selected half of the practice class from the brightest pupils, and the other half from the dullest. The exercise was one not requiring close analysis and hard thinking, but was largely mechanical. When the exercise was concluded the rector raised the question among the observers as to whether differences in ability had been detected. The fact had not been noticed, and the rector proceeded to explain how dull pupils could appear just as quick in purely mechanical work as the most perceiving, while, on the other hand, the superior strength of keener pupils was often unnoticed by the teacher who did not fully appreciate degrees of difficulty in lessons.

The seminary possesses a library of pedagogical works, though it is limited in size, to which students have access. The library facilities, apart from this, are excellent in Leipsic. Besides the general university library and a special library in the university, which contains all the most important pedagogical works in German and French, there is the library known as the "Comenius Stiftung," containing a rich collection of pedagogical material. This latter, however, is open only on two afternoons in each week, and is in such incommodious quarters, with insufficient number of attendants and poorly arranged catalogues, that it is not so useful as it might be. Its use is limited mainly to teachers of the people's schools.

To further the influence of the seminary, a certain number of stipendia, or scholarships, are awarded to deserving and capable candidates, residents of Saxony. These are not large in amount, but they aid a good many needy students.

Strasburg.—The seminary in connection with the Strasburg University, although discontinued since 1892, deserves mention because of its excellent accomplishment under the direction of Professor Ziegler, a well-known pedagogical writer and university professor of philosophy and pedagogy. This seminary differed from all others except Jena in having a sort of model class for whose advancement the director and his assistants were entirely responsible. Instead of selecting from gymnasial classes from time to time, Professor Ziegler selected eight or ten pupils from Tertia in the gymnasium. Having entire charge over them, a greater personal interest was taken in the pupils than would be the case were they under their direction at stated intervals only. In connection with the practical phase, Professor Ziegler gave lectures on the history of pedagogy, paying special attention to such authors as Locke, Rousseau, Comenius, and Herbart. Discussions in connection with the lessons given and with practical problems were carried on as in the other seminaries. Willmann's *Didaktik*, Schiller's *Handbuch der Pädagogik*, and Ziegler's own *Handbuch der Pädagogik* furnished much of the material for discussions.*

* Fries, *Die Vorbildung der Lehrer für das Lehramt*, p. 41 *et seq.*

Heidelberg.—Heidelberg has maintained a pedagogical seminary since 1809. It was first organized by the well-known author Chr. Schwarze, and is at present under the charge of the gymnasium director and university Professor Uhlig. The students listen to lectures on pedagogy in the university, and may enter the seminary only after being in attendance at the university for two years. The order of observation, instruction, and criticism is so similar to that offered at Leipsic and other university seminaries that it is unnecessary to give it in detail. The chief difference noticeable is in the distribution and order of classes given in charge of candidates. First a middle class of the gymnasium is taken, next a lower one, and lastly the highest or Prima. For example, the students expecting to teach classical philology might take classes in the following order: Cæsar or Ovid in Upper Tertia, Xenophon in Lower Secunda, Greek grammar in Lower Tertia, history in Quarta, Latin in Quinta, history in Upper Secunda, and at last Sophocles, Cicero, Plato, or Demosthenes in Prima.*

GENERAL NOTE TO SECTION "C."

As some of the points to be noticed by student observers in visiting a class, Schiller, of Giessen, recommended the following: †

1. Selection and disposition of the material in itself and in relation to the disposable time.

* Fries, *Die Vorbildung der Lehrer für das Lehramt*, p. 28 *et seq.*

† *Pädagogische Seminarien*, p. 138; also Fries, *Die Vorbildung der Lehrer für das Lehramt*.

2. Treatment : (a) The three teaching activities ; (b) questioning with special consideration of concentration.

3. Conduct and manner of the teacher (beginning and close of the lesson ; management of the class by attention and by the eye ; correct tone of voice, speaking, reading, questions, attention to errors of pupils ; proper selection of resting point ; occupation of entire class ; control toward close of the lesson ; were all pupils thoughtful about each question ? chorus answers, etc.).

4. Results as a whole : What was gained by the lesson ? Was an advance observable ?

Frick, of Halle, gave the following plan for the observation of a lesson : *

I. Selection and arrangement of material.

1. Was the kind and amount of the teaching material in right proportion to the given time ?

2. Was the material sufficiently sifted and correctly divided ?

3. Was the disposition of the material clear and comprehensive ?

II. Method of procedure.

1. Was a well-planned and suitable arrangement of the teaching activities followed ? namely :

a. Preparation for the new by connecting with the old and well known.

b. Elaboration (*Vertiefung, Begründung, Rückblick, Zusammenfassung*).

c. Presentation or development of the new.

d. Application (*Einübung, Einprägung*).

* Pädagogische Abhandlungen, ii, 351.

2. Was the lesson "anschaulich" presented, logically developed, systematically elaborated, thoroughly applied, and indelibly impressed?

3. Was the questioning good, the application of the questions good (especially the questions for concentration), and equally divided among the pupils?

III. Personality of the teacher.

How did the teacher conduct himself? Was he brisk yet cool, full of life, inspiring? Did he govern the class by his glance, his strength, and warmth of tone? Was his speech correct, well articulated, clear, plain, and economical? His reading a model for his pupils? The entire conduct and attitude commendable?

IV. Discipline (*Zucht*).

Was the entire class constantly busy? Did the teacher hold the attention and sympathy, in general, at equal tension? Did he understand how to renew and revive these through external means, such as pauses in the work, having the class stand, chorus reciting, etc.? Had he eye and ear for the failures and mistakes of pupils, or were many instances unobserved, others passed in silence?

V. Entire results and impressions of the lesson.

Was there observable a definite gain for the pupils? Was there a perceptible advance, on the part of the teacher, in independent recognition and careful observance of the suggestions given?

(D) *Courses in Pedagogy offered in the Universities.*

Below are indicated the various courses in pedagogy in all the German universities, taken from the

various announcements of courses (*Verzeichnisse*) for the winter and the summer semesters of 1896-'97.* (The figures refer to the number of hours weekly devoted to the lecture or the seminary exercise: W. winter; S., summer.)

Berlin. W. Pedagogy, 4; Paulsen.

The psychological basis of pedagogy, 1; concerning academic studies, 1; Steinthal. Summer semester, none.

Bonn. W. Philosophy and pedagogics, 2; Meyer. Pedagogy, 3; Bender. S. Philosophy and pedagogics, 1; Meyer. Humanistic and realistic education, 1; Wentscher.

Braunsberg. W. Pedagogy, 2; Krause. S. none.

Breslau. W. none. S. Pedagogics, 2; Baeumker. History of pedagogy, 2; Ebbinghaus.

Erlangen. W. none. S. none.

Freiburg. W. General theory of instruction, 1; discussion of pedagogical questions, 1; exercise in teaching in the gymnasia, 1; Zürn. S. History of pedagogy from the close of the Middle Ages, with special attention to the present, and giving particular consideration to the growth of pedagogical theories, 1; discussion of pedagogical questions, 7; exercise in teaching in the gymnasium, 1; Zürn.

Göttingen. W. none. S. History of pedagogy, 2; exercises in instruction for those who intend to teach philosophic propædeutics, 1; Baumann.

Giessen. W. General didactics, 3; Schiller. S. none.

* An examination of the course offered in 1898-'99 reveals very few changes.

Greifswald. W. History of Greifswald church and schools, 2; Pyl. Ethics and pedagogics, 4; Rehmke.

Halle. W. Pedagogy, 2; Uphues. S. History of pedagogy and instruction, especially in Germany since the beginning of the eighteenth century, 3; Erdmann.

Heidelberg. W. Disputation on pedagogical questions, with discussions relating to selected sections from Herbart and other pedagogical writers, 1; practice in instructing in the gymnasial subjects, 1; Uhlig. S. The present condition of higher instruction in the civilized European countries, with special attention to the disputed questions (*Streitfragen*) of the present, 2; criticisms and readings of selected passages from classical pedagogical authors, 1; exercises in gymnasial instruction, 1; Uhlig.

Jena. W. System of pedagogy, 4; pedagogical seminary with practice in instruction in the seminary school, Rein. History of pedagogy, 3; pedagogical discussions, 2; Stoy. S. General didactics, 1; pedagogical seminary with practice in the seminary school, 1; Rein. General philosophy of pedagogy, 3; pedagogical discussions relating to points in the lectures, 2; Stoy.

Kiel. W. Pedagogy, 2; Adickes. S. none.

Königsberg. W. none. S. none.

Leipsic. W. Exposition, criticism, and extension of the Herbart-Ziller system of pedagogy, 3; Barth. Selected questions from gymnasial pedagogy, 2; Richter. Pedagogy and its history, 5; Hoffman. Philosophical-pedagogical seminary: criticism of Schleiermacher's pedagogy, 1½; Volkelt. Pedagog-

ical seminary: visits to all grades and classes of schools, with practice work for the advanced students, 1 hour visiting, 5 hours practice; Hoffman. Practical pedagogical seminary: observation, practice, and criticism in gymnasial instruction, 4; Richter, Hartmann, Lehmann. School diseases and school hygiene, 1; Lange. Physiology and dietetics of the human body, especially for teachers, 4; Wenzel. S. History of pedagogy since the Renaissance, 4; Volkelt. The preparation of teachers for the higher school positions, with introduction to the history of the profession, 1; Richter. Christian religion for those preparing to become religious teachers in secondary schools, 2; Hoffman. Philosophical-pedagogical seminary: exercises on æsthetics in connection with reading of selected poems of Schiller, 1½; Volkelt. Pedagogical seminary: discussion of selected themes from the history of didactics, 1½; Barth. School diseases and school hygiene, 1; Lange. The two practical seminaries as in the winter semester.

Marburg. W. none. S. History of pedagogy, 2; Natorp. Discussions relating to the history of pedagogy, 1; Natorp.

Munich. W. none. S. none.

Münster. W. Psychological and pedagogical seminary, 1. S. Theory of gymnasial pedagogy, 4; Müller.

Rostock. W. none. S. none.

Strasburg. W. none. S. none.

Tübingen. W. Practice in teaching philology in the gymnasium, 2; Mager. S. none.

Würzburg. W. none. S. Pedagogy and didactics as a system of educational instruction, in connection with the history of pedagogy, 4; Grasberger.

The number of courses on pedagogy given in German universities is not so great as one would suppose, when the pedagogical renown of the country is taken into consideration. Where the office of the teacher requires such thorough preparation it would be natural to suppose that all the universities would offer complete facilities for the study of educational problems. All the universities have numerous courses in pure philosophy, and usually there are psychological courses offered. A number have psychological laboratories for the experimental study of problems. A few have made some experimental study of children and of educational psychological topics. But nearly all the work along the line of child study has been done by physicians rather than by psychologists or professors of pedagogy. Little of the modern work of this nature has emanated from the universities. Although the study of philosophy is earnestly and vigorously carried on, and a large amount of practice is exacted before a candidate is permitted to hold a permanent position, there is not the amount of activity that one might expect along the line of experimental education and child study. The deeply scientific experimental psychology, which has some of the most illustrious exponents in Germany, is not wielding the influence it might, and that it is exerting in America, in the study of educational problems. Pedagogy nowhere has received such thorough and scientific

treatment as in Germany, but it has been discussed from the logical and religious-moral standpoints in the main. The Herbartian idea of moral-ethical-religious training has received exhaustive consideration. But efforts to experimentally determine methods of procedure, capabilities of pupils, educational values, means toward ends, and many other educational problems susceptible of experimental study have received little attention at the hands of either psychologists or pedagogues. The former have been too engrossed in patiently and laboriously studying details from a disinterested point of view, while the latter do not seem to have become imbued with this phase of the great work of which Herbart was the pioneer and pathfinder. Both have failed to accomplish what it seems true disciples of the great master ought to do—the pedagogues to recognise the merits of exact scientific experimental methods of psychological investigation, and the psychologists to make useful application of their acquisitions. True, a few like Lange, Preyer, Strümpell, Ebbinghaus, Schumann, Müller, and others, most of them in recent years, have made initial movements, directly or indirectly, toward the application of experimental methods in education; but the activities in assiduously investigating educational problems manifested in America may well be carefully noted even by so great an educational country as Germany, where it has been said that all the world goes to school. There may be some cause for looking on too much unrest and experiment in education as a sign of instability and as a lack of continuity of pur-

pose; but when wisely and thoughtfully executed, unceasing agitation, premeditated and scientifically carried on, can not fail to produce a more highly organized and efficient educational system.

In many cases German pedagogy is based upon traditions and hypotheses rather than principles evolved from experience. If such questions as the possibility and advisability of the higher education of women, and the possibility of non-classical students being able to profit by study in all or any of the university faculties, had been given a test, rather than negatived upon purely historical grounds—in themselves hypothetical—there is little doubt as to the results. With Frl. Helene Lange we can well say that what Germany needs in settling the woman question is not logic but experiment.

In substantiation of the views above expressed a quotation from Professor Rein, of Jena, which was published in the *Deutsche Revue*, September, 1895, is pertinent: "The ancient contrast between plan and execution makes itself felt also in the field of education. In order to overcome it, modern pedagogy has turned toward the problem concerning the best professional preparation of educators and teachers, a question which the old generation viewed with supreme indifference. 'Only get knowledge, and the gift of imparting it will come by itself. Only have spirit, and you will know how to awaken spirit.' These and other similar sentiments that arose either from boundless pride or criminal frivolity were heard. However, the needs of the time make it imperative to call into existence institutions which

will promote the preparation of teachers. In establishing such institutions pedagogical considerations have not always been heeded. It has been overlooked that the centres of intellectual culture, our universities, should by right also undertake the task of preparing the educators of the people, who can not only comprehend the entire organization of our educational system, but also perform the detail work of education with artistic skill and devotion. A false notion of the object of our universities and their duties seems to dim our eyes. In the United States the universities are much less prejudiced in this as in other respects. It will not take long for them to surpass us, as they are establishing pedagogical chairs that will consciously, and with well-directed efforts, influence the development of the entire educational system of the Union. That is the point where we make a mistake. If, however, we notice the progress made in this respect by modern pedagogy in Germany over the views of former times, we may entertain the hope that the future will supply that for which the present lacks comprehension." (Translation as given in the Report of the Commissioner of Education, 1894-'95, i, 329.) And of a possible danger to America in imitating German methods the Educational Review says: "It is the example of Germany, so helpful in many directions, so hurtful in others, that has led us astray. In most German universities we find a professor (very often a teacher of philosophy or theology) discoursing learnedly 'Ueber Pädagogik,' and we have imitated his example, forgetting in our admiration of his Wissenschaft that

the besetting sin of the Germans is in their worship of thought to the neglect of action and reality.”*

4. TEACHERS' OFFICIAL TITLES.

Titles play a much greater and more significant rôle among German teachers than among American teachers. This is not to be wondered at in a land where a distinctive caste system reigns. In all classes of public offices position is designated very definitely by the title one is permitted to use. While in the United States there are all sorts and grades of presidents, professors, assistants, directors, etc., the titles having no uniform significance, in Germany all those with given titles occupy equal rank in the state, and in general throughout the empire. Within the same state the compensation received by all officials having the same title is essentially the same at the same periods of service. While there are all grades of individual capabilities and capacities in Germany as everywhere, yet the same title usually is evidence of exactly similar conditions and exactions imposed upon the person who is permitted to use the title. There are not, as with us, doctors of medicine, who have received their diplomas after two years of five or six months' attendance upon lectures of greatly varying standards, without even a good common-school education for a foundation,† side by side with others who have

* Educational Review, xiv, 3.

† It is only just to note that standards in medical colleges in America are being raised very rapidly. All reputable institutions have now three-year or four-year courses.

taken a full college course as preparatory, and have supplemented this by four full years of purely technical work, and yet all bearing the same title as insignia of fitness for performance of the same grade of work. In the eyes of the world they are equal; the same might be said of law, theology, and teaching. There are all grades of acquirements for the same nominal accomplishments. These facts may be cited incidentally, as some, perhaps the most prolific, of the causes tending to bring our educational and professional callings into disrepute both at home and abroad. Although the intelligent discountenance these methods, and understand the real conditions, yet people are prone to generalize, and that, too, from extreme cases. In this direction, although much has been done to stamp out dilettanteism by strict legislation, yet there is need of abundant vigorous measures in order to insure justice to all concerned.

In Germany, when a gymnasium director or a real-school director is mentioned, one understands it to mean a person in charge of an institution doing a definite amount of work: only a person of a definite minimum of attainments could be in charge. So, also, *Oberlehrer*, or head teacher, means one who has climbed a definite distance up the ladder of progress. With us, when a high-school principal is mentioned, unless his school is definitely known, no accurate idea is conveyed. It may be a principal capable of taking charge of a Boston high school, or a small two years' course high school in Iowa. The title "professor" is also applied variously to the village schoolmaster and to the profound scholar in the university.

Since the middle ages the various titles of rector, director, prorector, conrector, subconrector baccalaureus, collaborator, co-operator, collega, cantor, rector-perpetuus, historicus, musicus, mathematicus, pfarrer, tertius, quartus, etc., have been applied to the different grades of instructors in the secondary schools. The first three of these are still applied to the leaders or principals of secondary institutions. In Prussia the title of director is bestowed upon those in charge of complete gymnasia, real-gymnasia, or real-schools. The head of an incomplete institution—i. e., one having less than nine years in its course—is classed as rector. This title applies to those in charge of either burgher schools or of people's schools. In Saxony the titles are used in the reverse way, the head of a gymnasium being termed the rector, while the head of a real-school, burgher-school, or people's school receives the appellation of director. The usual title for the leader of a gymnasium is rector, while the leader of a Latin school is termed the subrector. Baden variously applies the terms director, rector, and Vorstand to the leaders of any secondary school. In Württemberg the head teacher of a gymnasium, real-gymnasium, or real-school with ten classes is usually called the rector, but sometimes the *Studienrath* (adviser of studies). The same titles are given in Hesse.

In Prussia the title *Oberlehrer* (head teacher) is conferred upon those who have fulfilled the conditions requisite for teaching at least two subjects in Prima. (See topic Examinations.) Sometimes the title is bestowed upon other especially distin-

guished and capable instructors. All others are called *ordentliche Lehrer* (ordinary teachers). The title professor is not promiscuously bestowed upon teachers, but is only conferred by proper authorities on persons of definite rank.

In Prussia the Minister of Instruction is empowered to grant the title professor, and a head teacher receives his title from the provincial school board. In some states, Saxony, for example, the King only confers titles. By these means the significance of titles is preserved, and unfledged youths and half-prepared dilettanti are kept from ranking with the worthy. The title professor is conferred only for especial merit in teaching, or for distinction gained in some scholarly work. Professors in the secondary schools occupy the same rank in the civil service as university professors. If in a university city, the secondary school professors frequently give lectures on pedagogics or didactics in the university. Now and then specially meritorious teachers of music or drawing have the title conferred upon them, but it is usually bestowed only for purely scholarly work or long service. To make the dignity of the title the greater, it is decreed that only one third of all the head teachers may be raised to the rank of professor at a given time. Only one half of the whole number of professors may be raised to the dignity of *Räthe*, or advisers, of the fourth rank in the civil service.* This rank is only attained after twelve years of service.

* Many officials are designated as a *Rath*, which means special counsellor or adviser.

The teachers in the Latin schools in Saxony were formerly designated, according to the classes they taught, as sextus, quintus, tertius, etc.; there were also collaborators or adjuncts. At the present time they are called teacher or class teacher. Technical teachers are designated as gymnastic teacher, singing teacher, etc. The one next in service to the rector is called the conrector. In all cases the title "head teacher" is conferred only by special decree from the King. Formerly it was conferred by the Cultus Minister, and only after four years of service. It is seldom given to those in the real-schools. The title of professor is given to the head teachers longest in the service, usually to from three to eight of an entire corps of from twenty-five to forty teachers. It is usually conferred for time of service rather than for especial distinction gained in scientific investigation. It seems to have been granted sparingly to real-school teachers, since only five of the twenty-three directors in 1894 possessed the title.

In Saxony teachers are not state officers in a legal sense. However, the rectors and professors since 1893 have been entitled to court rank (*Hofrang*). Professors in the secondary schools have the same rank as assistant professors of the university.

Baden gives all teachers having permanent positions, and who have served a sufficient length of time as teachers, the title of professor. Those without permanent positions are termed Praktikanten. The teachers in the Vorschulen are called *Reallehrer* (teachers of science) or *Volksschullehrer* (people's school teacher), while the religious instructor is

called the *Religionslehrer* (teacher of religion). Accessitant or unpaid supernumerary is the title applied to candidates during their probationary period in Hesse. After completing the trial service, they receive the appellation *Lehramts Accessor*, or assistant teacher. When permanently installed, they are called, as in most of the states, gymnasium teachers, real-gymnasium teachers, science teachers, etc.* Those longest in the service are termed professors.

In Bavaria the ordinary teachers of scientific branches are called professors or teachers in the gymnasia, and *Studienlehrer* (study teacher or subject teacher, named according to the subject taught, as mathematics or drawing teacher, etc.) in the Latin schools. In the real-schools they are called *Reallehrer* (science teachers). There are also special teachers of religion, gymnastics, and drawing. For each class there is usually in all states one teacher selected as a special overseer, who is responsible for the discipline, is a general adviser, and also teaches the most important studies connected with that period of the course.

Württemberg differs from most of the other states throughout its school appointments, and is not lacking in differences in teachers' titles as well as in courses of study and other arrangements. (Cf. chapter on Courses of Study.) The teachers are

* Any branch outside of the purely technical arts of drawing, singing, religion, and physical training is termed "wissenschaftlich" in Germany. The term is not to be confounded with natural science.

called preceptors and teachers in the begining of their career. After a certain term of service, and also for especially meritorious service, they receive the title of head preceptor or head teacher.

Mecklenburg and the other small states adopt the same nomenclature as Prussia in designating the various grades of teachers. Prussia serves as a model to these states, not only in this, but in many other important points relating to school organization. (Cf. remarks concerning courses of study, and also concerning students' leaving certificates and qualifications of teachers.)

5. TEACHERS' TENURE OF OFFICE.

In the United States the average official life of teachers is very short, only a few years at most. With women the average length of time that they remain in active teaching positions does not exceed four or five years. The teacher is also in many sections of the country almost as much of an itinerant as are Methodist ministers. Every year marks changes in the personnel of teachers in every part of the country. In Wisconsin, about one third of the high-school principals change positions every year. Each succeeding June brings a new exodus of teachers departing for new fields of activity.

In Germany the case is far different. Teachers once installed are fixtures for the rest of their active lives. It not uncommonly happens that the same teacher wields the rod and cares for the mental welfare of father and son or mother and daughter; and even to instruct three generations of the same

household is not an unchronicled event in the annals of some teachers' lives.

The following table indicates the changes that occurred in the instructional force of the secondary schools of Prussia for the four years from 1891 to 1894: *

Year.	Total number positions.	Total number new teachers.	New teachers, first position held.	New teachers from other places.	Total number leaving.	Called to other positions.	Choosing other occupations	Number retiring.	Number retired on pensions.	Number deaths.
1891	7,159	282	274	8	151	3	30	15	54	49
1892	7,236	241	236	5	179	6	40	17	61	55
1893	7,248	298	296	2	204	3	29	6	87	79
1894	7,302	233	225	8	209	2	42	8	98	59

6. TEACHERS' SALARIES.

After a consideration of the great amount of preparation that German teachers must secure before being admitted to the examinations for positions, the severity of the examinations when once admitted, the long subsequent training, and, finally, the difficulty experienced in securing a position, the question naturally presents itself: What remuneration do they get—are the salaries adequate to warrant such long and expensive apprenticeship? To answer this question, which may have occurred to the reader, tables are subjoined which indicate the salaries for different positions in all the principal states of the empire, and also in several typical cities.

* Compiled from Statistisches Jahrbuch der höheren Schulen Deutschlands, u. s. w.

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Table showing Salaries in the

PLACE.	Institution.	Position.	Begin- ning salary.	AFTER				
				2 yrs.	4 yrs.	5 yrs.	6 yrs.	7 yrs.
Prussia:								
Berlin.....	Complete 9 cl.	Director.	6,600	.....	.....	.....	.....	.....
Large cities..	Complete 9 cl.	Director.	5,100	.....	.....	.....	.....	5,400
Cities under 50,000	Complete 9 cl.	Director.	4,500	.....	4,800	.....	.....	.....
Berlin and large cities	Less than 9 cl.	Director.	4,500	.....	4,800	.....	.....	.....
Cities under 50,000 .....	.....	Director.	4,500	.....	.....	.....	.....	4,800
Cities under 50,000	Any sec. sch.	Ord. teachers	2,100	2,400	.....	.....	2,700	.....
	Any sec. sch.	Drawing.	1,600	.....	2,000	.....	.....	.....
Berlin	El. or Vorschule.	Drawing.	1,600	.....	2,000	.....	.....	.....
Other places.	Any sec. sch.	.....	1,400	.....	1,550	.....	.....	.....
	Any sec. sch.	Assistants.	1,500	.....	.....	to..	.....	1,800
Bavaria	Gym. and indust. sch.	Rector.	4,920	.....	.....	5,290	.....	.....
Bavaria	Gym. and indust. sch.	Professor.	3,720	.....	.....	4,080	.....	.....
Bavaria	Progym. and real-sch.	Rector.	3,720	.....	.....	4,080	.....	.....
Bavaria	Latin sch.	Sub-rector.	3,720	.....	.....	4,080	.....	.....
Bavaria	Any sec. sch.	Assistants.	1,620	.....	1,900	.....	1,980	.....
Bavaria	Any sec. sch.	Draw. and turn.	2,040	.....	.....	2,220	.....	.....
Bavaria	Any sec. sch.	Gym., Stu- dien, and Real-lehrer.	2,280	.....	2,640	3,000	.....	.....
Saxony.....	Gymnasium.	Rector.	6,600	.....	.....	.....	.....	to..
Saxony.....	Gymnasium.	Ord. teachers	2,400	.....	.....	.....	.....	to..
Saxony.....	Gymnasium.	Ass't "	1,500	.....	.....	.....	.....	to..
Saxony.....	Gymnasium.	Draw., turn., sing.	1,500	.....	.....	.....	.....	to..
Saxony.....	Real-school.	Dir.	4,500	.....	.....	.....	.....	to..
Saxony.....	Real-school.	Ord. teachers	1,500	.....	.....	.....	.....	to..
Württemberg ..	G. and R. G. and 10 cl. R. S.	Rector.	4,400	.....	.....	.....	.....	.....
Württemberg ..	Lycees, R. L., and 8 cl. R. S.	Rector.	4,200	.....	.....	.....	.....	.....
Württemberg .	Any sec. sch.	Professors.	3,600	.....	.....	.....	.....	.....
Württemberg ..	Any sec. sch.	Other teach- ers.	2,100	.....	.....	2,200	.....	.....
Württemberg ..	Lower Lat. and R. S.	Academic trained.	2,050	to 2,100	.....	.....	.....	.....
Württemberg ..	Lower Lat. and R. S.	Notacademic trained.	1,800	to 1,850	.....	.....	.....	.....
Baden	9 cl. sch.	Director.	.....	.....	.....	.....	.....	.....

Principal States of Germany.

AFTER													
8 yrs.	9 yrs.	10 yrs.	12 yrs.	14 yrs.	15 yrs.	16 yrs.	18 yrs.	20 yrs.	21 yrs.				
.....	5,700	.....	.....	.....	6,000	.....	.....	.....	F. R.	
.....	"	
5,100	5,400	.....	.....	5,700	.....	6,000	.....	.....	.....	"
5,100	5,400	.....	.....	5,700	.....	6,000	.....	.....	.....	"
.....	3,000	.....	3,300	5,100	3,600	.....	(19) 3,900	5,400 4,500 (27) 3,200	.....	.....	.....	"
2,400	2,800	.....	.....	.....	.....	3,200	.....	.....	.....	"
2,400	2,800	.....	.....	.....	.....	3,200	.....	.....	.....	"
1,700	1,550	.....	.....	2,000	.....	2,150 to 2,800	.....	.....	.....	"
.....	5,640	.....	.....	6,000	.....	.....	6,180 (a.)	.....	.....	.....	450	
.....	4,440	.....	.....	4,800	.....	.....	4,980 (a.)	.....	.....	.....	420	
.....	4,440	.....	.....	4,800	.....	.....	4,980	.....	.....	.....	420	
.....	4,440	.....	.....	4,800	.....	.....	4,980	.....	.....	.....	420	
.....	2,400	.....	.....	2,580	.....	.....	2,720	.....	.....	.....
.....	3,180	.....	.....	3,360	.....	.....	.....	.....	.....	.....	180	
.....	7,200	.....	.....	.....	900-1,200	
.....	6,000	.....	.....	.....
.....	2,100	.....	.....	.....
.....	4,000	.....	.....	.....
.....	5,400	.....	.....	.....
.....	3,900	.....	.....	.....
.....	4,600	.....	to.	4,900	.....	.....	.....	F. R.	
.....	4,400	to.	4,700	"	
.....	3,800	to.	4,100	"	
.....	2,300	2,400	to.	2,600 (30 yrs.)	"	
.....	to.	2,800 (30 yrs.)	"	
.....	to.	2,250 (30 yrs.)	"	
.....	5,500		

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Table showing Salaries in the

PLACE.	Institution.	Position.	Begin- ning salary.	AFTER				
				3 yrs	4 yrs.	5 yrs.	6 yrs.	7 yrs.
Baden	9 cl. sch.	Professor.	2,000	2,500 (2)	.....	3,000	.....	.....
Baden	Any sec. sch.	Trial teach- ers.	1,200	.....	.....	.....	.....	.....
Hesse.....	Gym. and R. G.	Director.	5,140	.....	5,455	.....	.....	.....
Hesse.....	Real-sch.	Director.	4,720	.....	4,930	.....	.....	.....
Hesse.	Any sec. sch.	Ord. teachers university trained.	2,500	.....	.....	.....	.....	.....
Hesse.....	Any sec. sch.	Ord. teachers seminary trained.	1,650	.....	.....	.....	.....	.....
Mecklenburg ..	Any sec. sch.	Director.	5,700	6,400	.....	.....	6,300	.....
Mecklenburg ..	Any sec. sch.	Sci. teachers.	2,000	2,500	.....	.....	3,000	.....
Alsace-Lor- raine	18 Gym. and 4 R.-sch.	Director.	4,800	.....	.....	.....	.....	4,800
Alsace-Lor- raine	8 sec. courses less than 9 yr.	Director.	4,500	.....	.....	.....	.....	4,500
Alsace-Lor- raine	Any sec. sch.	Head teachers.	2,600	.....	.....	.....	.....	.....
Alsace-Lor- raine	$\frac{1}{2}$ of compl. inst. and $\frac{1}{2}$ inc.	Head teachers.	2,600	2,900	.....	.....	3,200	.....
Braunschweig.	Gym. and R. gym.	Director.	4,800	5,100	.....	.....	5,400	.....
Braunschweig.	Gym. and R. g. m.	Head teachers.	2,100	2,400	.....	.....	3,000	.....
Braunschweig.	Gym. and R. gym.	Ordinary teachers.	2,100	2,400	.....	.....	2,700	.....
Oldenburg	Any sec. sch.	Director.	5,000	5,300	.....	.....	5,600	.....
Oldenburg	Any sec. sch.	Head teacher.	2,400	2,700	.....	.....	3,000	.....
Saxe-Weimar ..	Gym. and R. gym.	Director.	5,200	.....	.....	.....	.....	.....
Saxe-Weimar ..	Gym. and R. gym.	Ord. teachers	2,200	.....	.....	.....	.....	.....
Anhalt	Any sec. sch.	Director.	4,500	4,800	.....	.....	5,100	.....
Anhalt	Any sec. sch.	Head teachers.	2,600	2,900	.....	.....	3,200	.....

See Baumeister. *Erziehung und Unterrichtslehre*, I, ii, pp. 1-233. Also Rein's

Principal States of Germany (continued).

AFTER													
8 yrs.	9 yrs.	10 yrs.	12 yrs.	14 yrs.	15 yrs.	16 yrs.	18 yrs.	20 yrs.	21 yrs.				
3,500	.....	4,000 (11)	.....	4,500	.....	.....	..to..	5,000 (18)	.....			
.....	.....	.....	.....	.....	.....	.....	..to..	1,600	.....			
.....	..to..	5,570	.....	.....	.....	.....	.....	.....	.....				600
.....	..to..	5,140	.....	.....	.....	.....	.....	.....	.....
.....	..to..	.....	.....	.....	.....	.....	.....	.....	5,000				
.....	..to..	.....	.....	.....	.....	.....	.....	.....	2,925				
.....	.....	6,600	.....	.....	.....	.....	.....	.....	.....
.....	.....	3,500	.....	4,000	.....	.....	4,500	.....	5,000	5,400	(25 yrs.)	800 or R. No R.	
.....	.....	.....	.....	5,400	.....	.....	.....	6,000	6,600	.....	.....	R.	
.....	.....	.....	.....	4,800	.....	.....	.....	5,100	5,400	.....	.....	R.	
.....	.....	.....	.....	.....	.....	.....	.....	5,000	.....	.....	.....
.....	3,500	.....	4,700	.....	5,000	.....	.....	5,300	.....	5,900	(24 yrs.)	No R.	
.....	5,700	.....	.....	6,000	.....	.....	.....	.....	.....	.....	.....	R.	
.....	3,300	.....	3,600	.....	3,900	.....	4,200	.....	4,500	.....	5,400 (30 yrs.)		
.....	3,000	.....	3,200	.....	3,400	.....	3,600	.....	3,800	.....	4,000 (30 yrs.)		
.....	5,900	.....	6,200	.....	6,500	.....	.....	.....	.....	.....	.....	No R.	
.....	3,300	.....	4,500	.....	4,800	.....	5,100	.....	5,400	.....	5,700 (25 yrs.)	No R.	
.....	.....	.....	..to..	.....	.....	.....	.....	.....	.....	.....	5,700		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,000 in 10 addi- tions.	300-500 No R.	
.....	5,400	.....	.....	5,700	.....	.....	.....	6,000	.....	.....	.....	R. or 800 M.	
.....	3,500	.....	3,800	4,700	5,000	.....	.....	5,300	.....	.....	5,900 (24 yrs.)	No R.	

Encyclopädisches Handbuch der Pädagogik, article Besoldung der Lehrer, i, 350 *et seq.*

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Salaries in Some Cities

PLACE.	Institution.	Position.	Begin- ning salary.	AFTER	
				3 yrs.	4 yrs.
Berlin.....	Gym., R. gym., Ober- real-school.	Director.	6,600	.....	.....
Berlin.....	Gym., R. gym., Ober- real-school.	Head teachers.	3,200	3,500	.....
Berlin.....	Gym., R. gym., Ober- real-school.	Technical sub- jects.	2,300	.....	.....
Berlin.....	Gym., R. gym., Ober- real-school.	Gymnastics.	2,400	.....	2,600
Berlin.....	Gym., R. gym., Ober- real-school.	Gymnastics.	1,900	.....	.....
Hamburg.....	Gymnasium.	Director.	10,000	.....	.....
Hamburg.....	R. S.	Director.	7,200	.....	7,800
Hamburg.....	Any sec. sch.	Head teachers (a)	7,200	.....	7,800
Hamburg.....	Any sec. sch.	Head teachers (b)	5,200	.....	5,800
Hamburg.....	Any sec. sch.	Head teachers (c)	3,200	.....	3,800
Hamburg.....	Any sec. sch.	Technical teach- ers (a)	4,100	.....	4,400
Hamburg.....	Any sec. sch.	Technical teach- ers (b)	3,200	.....	3,500
Hamburg.....	Vorschule.	Ordinary teach- ers (a)	2,600	2,850	.....
Hamburg.....	Vorschule.	Ordinary teach- ers (b)	1,800	2,050	.....
Leipsic.....	Gymnasium.	Rector.	6,900	.....	.....
Leipsic.....	Gymnasium.	Conrector.	5,700	.....	.....
Leipsic.....	Gymnasium.	Head teachers.	2,400	.....	.....
Leipsic.....	Gymnasium.	Assistants.	1,700	.....	.....
Leipsic.....	Gym. and R. S.	Gymnastics and draw.	2,000	.....	.....
Leipsic.....	Real-school.	Director.	5,100	.....	.....
Bremen	Gym. and R. gym.	Director.	7,000	.....	.....
Bremen	Real-school.	Director	6,000	.....	.....
Bremen	Gym. and R. gym.	Academic trained tr.	2,500	.....	.....
Bremen	Gym. and R. gym.	Seminary trained tr.	2,250	.....	.....
Bremen	Real-school.	Academic trained tr.	2,400	.....	.....
Bremen	Real-school.	Seminary trained tr.	2,000	.....	.....
Dresden	Gym. and R. gym.	Rector.	6,000	.....	.....
Dresden	Gym. and R. gym.	Conrector.	5,500	.....	.....
Dresden	Gym. and R. gym.	Head teachers.	2,400	2,700	.....

not regulated by the State.

AFTER

5 yrs.	6 yrs.	7 yrs.	8 yrs.	9 yrs.	10 yrs.	12 yrs.	14 yrs.	15 yrs.	18 yrs.	20 yrs.		
.....	6,900	.....	.....	.....	.....	7,200	.....	.....	.....	.....	.....
.....	3,800	.....	.....	4,100	.....	4,400	.....	4,700	5,000	5,300 (21)	5,600 (24)	.....
2,600	2,900	.....	.....	3,200	3,800	.....	.....	.....
.....	2,800	.....	.....	3,000	.....	3,200	3,400	3,600 (21)	.....	.....
2,100	2,300	.....	.....	2,500	.....	2,700	.....	.....
.....	8,400	.....	.....	9,000	.....	.....	.....	.....	.....	.....
.....	8,400	.....	.....	9,000	.....	.....	.....	.....	.....	.....
.....	6,400	.....	.....	7,000	.....	.....	.....	.....	.....	.....
.....	4,400	.....	.....	5,000	.....	.....	.....	.....	.....	.....
.....	4,700	.....	.....	5,000	.....	.....	.....	.....	.....	.....
.....	3,800	.....	.....	4,100	.....	.....	.....	.....	.....	.....
.....	3,100	.....	.....	3,350	.....	3,600	.....	.....	.....	.....	.....	.....
.....	2,900	.....	.....	2,650	.....	2,800	.....	.....	.....	.....	.....	.....
7,200	7,500	.....	.....	.....	.....	.....	.....	1,050
.....	to	.....	.....	.....	.....	5,100 (25)	.....	.....
.....	to	.....	.....	.....	.....	2,100 (25)	.....	.....
2,400	2,800	.....	.....	3,100	.....	3,400	3,600 (25)	.....
.....	1,050
7,500	8,000	.....	.....	.....	.....	.....	.....	.....
6,500	7,000	.....	.....	.....	.....	.....	.....	.....
3,500	4,500	.....	.....	5,500	.....	.....	6,500	.....
2,750	3,250	.....	.....	3,750	.....	.....	4,250	.....
3,300	4,200	.....	.....	5,100	.....	.....	6,000	.....
2,500	3,000	.....	.....	3,500	.....	.....	4,000	.....
6,900	7,200	.....	.....	.....	.....	.....	.....	R.
5,800	6,000	.....	.....	.....	.....	.....	.....	.....
.....	3,000	.....	.....	3,400	3,600	3,900	.....	4,600	4,900	5,200 (21)	.....	.....

The foregoing tables of this section show the beginning salaries, and the various additions that are made to them at intervals. The values given are in marks (1 mark = 23.8 cents; approximately, one quarter of a dollar). It will be remarked that the beginning salaries are very low, and that increases are small and far apart. (The last column indicates whether a free residence (F. R.) is furnished or the amount sometimes given in lieu of it. In some cases it was impossible to determine. Usually from ten to fifteen per cent of the salary received (according to expensiveness of the locality) is allowed for rent.

When we take into consideration the fact that the purchasing power of money is no greater in Germany than in this country, it must be admitted that the salaries are very meagre. After living in both countries, and keeping a very strict account of expenses of living, I have found that to live in Germany on the same plane as here the expenses differ very inconsiderably. The balance, if any, shows increased cost in Germany. I am well aware that popular opinion conceives the case differently, and also that many writers make opposite statements. But they lose sight of the important part of the argument—i. e., they forget to make the plane of living the same for both countries. That Germans do live more cheaply than Americans I do not propose to dispute. But that one can live in the average city in the United States as cheaply as he can on the same plane in Germany, I am fully convinced from an inspection of my own closely

kept account book. There are certain classes of articles that are much cheaper in Germany than in America. Laces, silks, china ware, toys, fancy goods, ladies' hats, cloaks, and ready-made dresses, wine, beer, cigars, and smokers' articles are all cheaper there than here—some very much, others only a little. All sorts of amusements, such as theatres, museums, fairs, public parks, skating rinks, baths, etc., are about one fourth of American prices.

Rent is also considerably lower than in American cities; doctors' fees, lawyers' fees, dentists' fees, and barber bills are also only one half or one third as high there as here. But when we turn to the consideration of the cost of food products and staple articles of wearing apparel the case is changed. All articles of food consumption, with the exception of "Roggenbrod" and some kinds of vegetables, are much higher. Wheat flour costs nearly twice as much, all kinds of meat from twenty-five to fifty per cent more; eggs, butter, sugar, potatoes, and most fruits, about twenty per cent more than in America. All kinds of ready-made clothing, cotton or woollen goods, shoes, hats, umbrellas, etc., can be bought in America equally as cheap as in Germany. The subject might be discussed at great length, but it is sufficient to note that the facts shown in the tables indicate that the amount of salary which the ordinary German teacher receives is very small, considered absolutely or relatively.

One compensation for the scantiness of salary is, however, the expected pension. A teacher who has served in the public schools ten years or more, if

disabled by sickness or accident, is assured of a pension. After serving about forty-five years he may retire and receive a pension for the rest of his life. The amount of the pension varies with the length of service, being about twenty-five per cent of the salary received at the end of ten years' service and increasing up to about seventy-five per cent at the end of forty-five years. The amounts and time requirements vary in the different states. A man's widow and small children also receive certain pensions in case of the teacher's death. Hence there is not that anxiety concerning a "rainy day" or old age that constantly presses upon American teachers.

CHAPTER III.

MOVEMENTS TOWARD REFORM IN COURSES OF STUDY.

1. HISTORICAL BASIS OF CURRICULA.

SINCE the question concerning the species of secondary school or schools best adapted to the needs of Germany has occupied so much of the attention of the schoolmen and philosophers, and the German people in general, it will probably not be amiss to sketch briefly the fundamental questions that have entered into the discussions. It will also be well to point out the various epochs in the growth of the secondary-school systems. The recent movement is not of mushroom growth, but its roots extend far back into the past. The present movement is only the culmination of long-continued agitation, sometimes quiet and undemonstrative and at other times breaking forth in discussions and controversies of the most heated and lively sort.

I shall not enter into details of secondary school history. To do it justice would require a volume for that topic alone. Those who care to inquire into the subject exhaustively will find rich mines of information and philosophical treatment in such works as Paulsen's *Geschichte des gelehrten Unterrichts*. For full and detailed accounts of the most recent movement, which culminated in the "De-

ember Conference of 1890," see Prof. Charles H. Thurber's account in the Report of the Commissioner of Education, i, 1889-'90. A clear and concise account of the movement is also to be found in Prof. Dr. Conrad Retwisch's *Deutschlands höheres Schulwesen im 19. Jahrhundert*. From the three authors mentioned, the facts here embodied are drawn principally, and the only justification of this chapter is the advantage of making the treatment of German secondary schools symmetrical, and also the desire to place in proper perspective, for those who may not read German, the facts which come later in my treatment of present courses of study.

The gymnasium is the outgrowth of the first schools founded in Germany during the middle ages. Previous to the influence awakened by the Renaissance, learning was mostly confined to the monasteries; but with the influx of new learning and the growth of cities in Germany, other schools than the *Dom* and *Kloster Schulen* (cathedral and cloister schools) became a necessity. The *Ratschulen* (city schools) were erected, and from these came the typical Latin school of the sixteenth century, this in turn developing in Germany into the gymnasium of the present. In England the term "grammar school" became prevalent in designating schools of the same character. In America the term Latin school was used until the beginning of the present century to designate the offshoot in this country. The name gymnasium first came into use in Germany in the sixteenth century.

The purpose of the *Dom* and *Kloster* schools was

avowedly that of preparing the clergy for the church, and hence they attempted to give instruction and finish in all knowledge which the clerical calling made necessary. These branches consisted of singing, reading, writing, computation, and grammar, as fundamentals; then followed those studies which enabled them to speak with more force and elegance. A knowledge of the sciences was also considered necessary to a proper exegesis of the sacred writings. Thus arose the "seven disciplines"—the three formal (*artes sermocinales*) and the four real (*artes reales*) disciplines. The first consisted of grammar, rhetoric, and dialectics, and the latter of arithmetic, geometry, astronomy, and music. All, however, it must be borne in mind, centred about one point, that of preparing for religious duties and formalities. As Professor Paulsen says,* the aim was "literarische Bildung und Konfessionelle, oder mit Joseph Sturms Formel, *litterata pietas*." He further adds that the literary ideal conceived was the ability to write classical Latin in prose and verse. It was believed that imitation of the old poets and rhetoricians was the road to eloquence. H. Wigge writes: † "Das Gymnasium ist ursprünglich als Berufsschule für die Diener der Römischen Kirche gegründet worden. Es war bestimmt, zu lehren, was zum Verständniss der Kirchenlehre und zur Ausübung des Kirchendienstes nothwendig war, die Sprachen, die Bibel und der Kirchenvater; Lateinisch, Grie-

* Geschichte des gelehrten Unterrichts, ii, p. 3.

† Rein's Encyclopädisches Handbuch der Pädagogik, ii, iii.

chisch, Hebräisch, ersteres vor allen; es musste also die alten Sprachen treiben, um Theologen zu bilden."

From the schools of the middle ages, having the classical studies as the core of all instruction, the gymnasium of the present does not widely deviate in curriculum. By examination of their programmes in Prussia, it is found that out of each 252 hours' total instruction in a gymnasial course, 62 hours are devoted to Latin, 36 to Greek, 19 to religion. That is, 117 hours are still devoted to classics and to religious observances. Frequently there are 6 hours of Hebrew additional. In Saxony even more time is devoted to Latin and Greek than in Prussia. Thus, nearly half of the boy's whole study time, from six to twenty years of age, is spent in mastering languages long since dead, and with thoughts expressed nearly twenty centuries ago—material which is no longer necessary to investigation. Professor Paulsen says that if all the scientific literature of the ancients were dropped completely out of existence, mathematics, natural science, jurisprudence, philosophy, and theology would in no wise suffer.*

Although the core of the studies is the same as formerly, the ideals striven for are undoubtedly vastly different. As Professor Paulsen sees it, the goal now striven for is not imitation, but the formation of the mind and taste through intercourse with the old authors in all literary productions. This view is perhaps the philosophical one taken by learned

* Geschichte des gelehrten Unterrichts, ii, p. 633.

pedagogues, but the more immediately practical view sees that it is the secondary school which fits for the university, and opens the way to certain privileges in life which no other course will do. "All roads lead to Rome, but only one to the university, and that road is the gymnasium."*

Realschulen (real-schools) have been in existence since the beginning of the eighteenth century. The name was first used in Halle. Christopher Semler there opened a "mathematische und mechanische Realschule." It was not a school with an independent existence, but an "institute" in which a few courses were given, where "instruments, models, machines, and implements, as well as natural objects of all sorts, could be explained." The chief aim, according to Semler, was: "dass die Jugend an eine wahre Realität gewohnt werde. For here are no empty speculations or useless subtilities, but *ipsisimæ res*, they are *Dei opera*, and such machines as render utility in daily life."†

The first fully developed real-school was organized in Berlin in 1747 by J. J. Hecker, a former student in Halle. His first thought was to better the existing conditions of the elementary schools, and secondly to provide a higher school for the most inquiring of the middle classes. In this "ökonomisch-mathematischen Realschule" of Hecker the programme of 1747 included religion, Latin, German, French, drawing, history, geography, geometry,

* Juling, Das zehnklassige Gymnasium.

† Paulsen, *op. cit.*, ii, p. 63.

mechanics, architecture, and morals, besides special courses for particular callings.* Immediately after this similar schools began to grow up all over Germany. The courses at first did not appear very different from many of the Latin schools of the day, but as soon as the Abiturienten, or leaving examination, was inaugurated in 1788 the separation became at once definitely marked; the gymnasium maintained its classical character while the real-school became more and more a people's school.

About 1821 Director Spilleke of the Berlin school began to realize that the same school could not well give pupils of the middle classes of people a proper general education and at the same time provide technical instruction. In the early '20's Greek was made one of the required major subjects of the final examination in the Latin schools and gymnasia, and was placed in the curricula as a regular subject beginning with Quarta. These changes made the Latin schools more and more unsuitable to the common people, and it became evident that something must be done to provide for the needs of those who expected to enter upon business life as well as of those who expected to attend the universities. The labourers realized that they did not need the classics; they were learning what they did not need, and what they needed they did not learn. The future university students were also hindered by the presence of so much unnecessary foreign material.

But the government was loath to take a hand in

* Paulsen, *op. cit.*, ii, p. 64.

the matter of adjustment. Paulsen writes that the governmental interests were more closely united with the gymnasium than with the seemingly necessary "compromise" school. The question came up in this form: "What shall be done with those gymnasium students who will not attend the universities?" *

It was the opinion of Johannes Schulze (then Minister of Education in Prussia) that the gymnasium must be entirely freed from this "Schülerballast" (later so called).

In March, 1824, a rescript from the minister was issued which obliged the schools to make severer examinations and sharper distinctions, so as to free the gymnasia of all unsuitable material. But so much pressure was brought to bear upon the government in the clamour for some sort of a "compromise" institution that in March, 1832, an order relating to the final examinations ("Entlassungsprüfungen dem höheren Bürger und Realschulen"), was issued, which indicated that the pupils who passed it should have the same privileges (relating to the one year's free military service, the right to enter the postal service, etc.), that had been given to the gymnasial graduates. (At that time the real-schools had nine-year courses.) The subjects for examination were German, Latin (Cæsar, Ovid, Vergil), French (in schools where taught, including the ability to read, write, speak), English, Italian, reli-

* "Was das Gymnasium mit dem Schülern machen solle, die nicht zu Universitätsstudien seien?"

gion, history, geography, mathematics, and natural science. But it was also added that if Latin was not taught the graduates should be excluded from all positions where Latin was needed. Thus, here was a distinct blow at the real-schools on the part of the government. Latin was a prescribed study, and if "Lateinlos," about the only privileges they could claim were similar to those of the burgher schools, since most of the important positions could and did contend for Latin as a prerequisite for entrance to them. The real-schools had become, as Paulsen says, real-gymnasias against the wishes of the people and without attached privileges.

But in consequence of the reaction against this state of things there came better things for the real-schools. Through the wail that went up from all quarters concerning the injustice, the real status became evident. The recognition of the evil was a very important factor in the solution of the problem. At all events, on October 6, 1859, an important order was issued by the government. This marks the birth of the Prussian real-gymnasium.

By this order the real-schools were brought under the management of the Provincial Schulkollegium instead of remaining under the same management as the people's schools. They were in the future to be recognised under three classes: real-schools of the first class and second class, and higher burgher schools. The first to be the normal form, having a nine-year course, with Latin throughout the courses; the other two to be incomplete forms with shorter courses. The second class was to be ar-

ranged without entitling to the coveted privileges (*Berechtigungen*); Latin was to be optional. The higher burgher school was planned to have the same course as the real-schools of the first class, lacking, however, the two years in Prima. This form subsequently developed into the real-progymnasium. In the official Lehrplan, or plan of studies, it was stated that no principal difference was to be recognised between gymnasia and real-schools; both were to impart the fundamentals of knowledge; the real-school was not to become a technical school; the two were simply to prepare for the different future callings. This division was made a necessity in consequence of the development of science and the changed relations of life fast asserting themselves.

But as to privileges the real-schools were still at a disadvantage. True, the real-schools of the first class, as well as the gymnasia, were given the privilege of the one-year voluntary military service after a half year's attendance in Secunda, and their graduates were also admitted to study in some of the technical schools.

In the other two classes of school a half year in Prima was required to secure the one-year voluntary service. But graduates from the real-schools of all classes were debarred from the universities. The classical gymnasium was still the only road.

Nevertheless, the necessity for the existence of the real-schools was being demonstrated. On the one hand, the conditions of life were constantly changing, and the demands of the departments of skilled labour were making manifest the necessity of

higher training, combined with the acquaintance with scientific methods; on the other hand, the technical schools were rapidly coming into existence. These, in turn, exerted a most potent influence in shaping the courses of training preparatory to entering them. In place of the superfluous classic lore they demanded an acquaintance with things. Henceforth, in all parts of Germany this new form of compromise school began to grow rapidly. They were established in Saxony, Bavaria, Würtemberg, Hesse, Mecklenburg, Schleswig-Holstein, and in the free cities of Hamburg, Lübeck, and Bremen. They were recognised in name in Saxony as early as 1870, (some years before they were in Prussia), and in Bavaria in 1864. Paulsen strenuously denies that they were arbitrary creations of the Prussian school bureaucracy ("*Schulbureaukratie*"), as some have maintained, but affirms that they were the necessary products of the age. He writes in substance: "The real-gymnasium is not a discovery but it is a growth of the time. Various commercial conditions and necessities have brought forth the new form of gymnasium. It is not a pure citizens' school, neither is it a pure classical school, but partakes of the nature of both. There are people who require a secondary education which neither the citizens' school nor the classical gymnasium offers. They are in a large part to be found in the government official positions, and do not go to the university. It is for them that the new form of 'Hochschulen' has arisen during this century (such as mining, engineering, forestry academies, military academies, etc.). They cannot

wholly dispense with Latin, because it is met with on all sides in their work, neither can they get along without the sciences and modern languages. Besides these there are those who have charge of great industries, also merchants, landlords, technical men, and chemists, who could get along without Latin in their business, but frequently experience a lack in the way of accomplishments, when not in possession of it. Hence, the real-gymnasium has arisen to meet these demands.* If the real-gymnasium be struck out the result cannot be otherwise than that the majority of its pupils will turn toward the gymnasium rather than take up with the less worthy citizens' school. The philologists will then view the situation askance from two points of view. One class will see only the growing burden of unfit pupils (*wachsende Schülerballast*), the other class will see the growing recognition of classical instruction on the part of the common people."†

By 1864 the higher citizens' school had nearly disappeared, and in its place the real-gymnasium, or *Nützlichkeitkramschule*, as some derisively called it, had become incorporated. The cities had conformed to the new order and built real-gymnasias alongside of the gymnasia. In 1869 the first class was graduated from the real-gymnasium in Prussia. In 1870 the graduates were permitted to study mathematics, natural science, and modern languages in the university. They

* Der Begriff liebt reine Formen, die Wirklichkeit dagegen fordert mannigfache Uebergangsformen.

† *Op. cit.*, ii, p. 557.

still demanded more and asked to be admitted to the universities with the same privileges, especially in medicine, as gymnasial students were accorded. From this point the strife has gone on for a quarter of a century, but little more has been gained.

About 1870 real-schools without Latin began to be established. These have since developed into the higher real-schools. In 1879 they were given the privilege of preparing students for the industrial school.

The revision of the course of study, which had been before the authorities since 1873, was finally effected in May, 1882. On the 27th of that month, for the first time, all the higher schools were brought together in a united order. The higher real-schools were then first officially recognised. They had developed out of the real-schools of the second class and the industrial schools. From that time seven classes of secondary schools have been recognised, viz.: gymnasia, real-gymnasia, higher real-schools, progymnasia, real-progymnasia, burgher schools, and real-schools.*

Thus matters stood in 1882; and since that time discussion has waxed warm upon the questions that were then uppermost, and upon side issues that have grown out of the original questions at stake. On the one hand there have been ranged the champions of the newer scientific education, deemed to meet better the necessities of the time, and still prepare for the university faculties; on the other hand are the exponents of the time-honoured classical instruction,

* See chap. i, p. 6, Outline of Schools.

who can see only one way of securing a liberal education, and that through the classics. The latter have prophesied that the recognised parity between the classical and the realistic institutions would jeopardize learning and ruin German science. Moreover, they fear a deluge of candidates for the learned professions. They fear a class of "hunger candidates," educated paupers, and wish to devise means of keeping the masses away from the universities.

Out of these controversies has grown the "Ueberbürdungsfrage," or the question of overburdening of courses, that has come about by attempting to make each class of school meet the needs of all classes of students. The gymnasium students have been overburdened with extra scientific studies, while the real-school pupils are still swamped by the Latin they must carry in order to secure recognition. Both forms of institution have multiplied their subjects in order to meet the modern demands made upon them. According to Paulsen (ii, p. 561) the classical enthusiasts are responsible for much of the manifest unrest. He writes: "The entire school war (*Schul-krieg*), the entire unfortunate complication of things, has been entirely brought about because the philologists have secured laws making Greek a compulsory study in the gymnasium, and as a prerequisite to all higher study. Had they let the Latin school of the preceding century alone and allowed it to develop itself naturally; had they not decreed that all who wish higher education must take Greek as the only means; then there would have branched out peacefully from the classical schools a higher burgher

school, instead of a real-school with Latin, which has only split off from the gymnasium after a hard fight.

"The stubbornness and selfishness of the philologic dogmatists (*Schulpäpste*), with their belief in the requirement necessitating all the world to partake of the only saving culture (the classical), has alone brought forth the entire unrest and offensiveness of the struggle."

2. THE FINAL STRUGGLE.

The struggle for reform in the schools was very pronounced during the years between 1882 and 1888. During this period Dr. Rethwisch writes that no less than three hundred and forty-four reform propositions were published, in which the following general demands were most prominent:*

1. A common basis of organization of the lower grades (eleven to sixteen years) in all secondary schools, and, as far as possible, in the studies offered. To accomplish this, they demanded the so-called "Einheitsschule," with the above features.

2. Greater weight placed upon the more modern subjects of instruction in the gymnasia.

3. In all the secondary schools more especial attention to the German language and literature.

4. Changes in the privileges (*Berechtigungen*) conferred by the "Reifezeugniss" and other certificates of promotion from the schools.†

* See Rethwisch's *Deutschlands höheres Schulwesen*, p. 119.

† Rethwisch says: "Der Angelpunkt den ganzes Schulfrage lag in den Berechtigungswesen." (*Loc. cit.*, p. 119.) Further,

5. More bodily exercise in all schools.

Among other questions growing out of these are a few taken from the constitution of (a) the General German Association for School Reform, and (b) the prospectus of The New German School, the organ of the association for school reform.

6. Better preparation of students for their later callings as teachers and educators (from "a" and "b").

7. Simplification of the system of examinations ("a" and "b").

8. Better school hygiene ("a" and "b").

9. Greater co-operation of parents in the duties and rights of education (from both "a" and "b").

10. Unification of all efforts for school reform (from "b").

11. An independent administration for educational affairs under a more complete direction of specialists ("b").

12. An educational code ("b").*

The general meaning of the entire unrest has been admirably summed up by Dr. Rethwisch,† from

according to Prof. Ziegler: "Den Anlass zum Anspruch des in den letzten Jahren mit so grosser Erbitterung geführten Streites um die Schule gab aber die Frage der Berechtigungen. Das sogenannte Gymnasialmonopol wurde in Anspruch genommen, und die Zulassung der Realgymnasialabiturienten zum Univeritätsstudium. speziell zu dem der Medizin begehrt und erstrebt." (Die Fragen der Schulreform, p. 10.)

* See Bureau of Education Reports, 1889-'90, i, pp. 339-343, for translations and reports.

† *Loc. cit.*, pp. 113-115.

whom I take the liberty of quoting at some length. "The German school reform movement is only one branch of a general European movement. The development of civilization in recent times has made such extraordinary strides that the significance of antiquity as a source of knowledge is much less than formerly. Each European people of the '*Kulturkreis*'* looks back upon a rich national mental development. Each one must, however, be admonished to contemplate sharply its own powers and possibilities in order to gain a more intimate acquaintance with the characteristics of other civilized nations. This is made imperative by the world's commercial struggle, which has been ushered in by the electric spark. The higher schools of all lands have an infinitely greater task to perform than formerly, in bringing the growing youth into sympathy with the education of the present.

"The degree in which the individual European peoples still feel the effects of antiquity and correspondingly change the subjects of study in their higher schools stands in a direct proportion to the degree in which antiquity penetrated into the previous national life. The culture of antiquity is yet a part of the present in the life of Romance peoples in a higher degree than in the Germanic and other civilized nations of Europe. Since Frary's '*La question du Latin*,' the reform movement in France has not come to a standstill. Only recently there was formed in France, with the names of leading personalities head-

* Literally, civilized circle—i. e., the educated nations.

ing the list, a national association for the reform of secondary education, which attempts to formulate a scheme in which the lowest grades shall all have the same instruction. During the period of common instruction the course is to be without ancient languages, while in the upper grades they may diverge into the humanistic direction or into that of exact science. An examination is to be given at the close of the lower period. In all the schools with this common basis the first part of the baccalaureate examination of the classical secondary instruction consists of a Latin translation and a French composition, for which three themes are given to the pupil to select from. In the second place, the candidates are examined in philosophy or in mathematical physics, or, in special cases, in natural science. All three divisions of examinees must show their acquaintance with modern history.

“In England, the London University has made the beginning in the reform, since Greek is no longer among the required subjects in the matriculation examination.

“Sweden and Norway have a three-grade common school: the lower form without Latin; a middle form without Greek, but one branch having Latin; and an upper form with Greek for the classical students. Greek is a prerequisite only for future theologians and philologists. In the Hungarian gymnasias Greek has become optional, and is only required of students of theology, science of language, philosophy, and history. All other branches of study are open to the real-school graduates, who

may have optional Latin, as well as to the gymnasial graduates who have not chosen Latin. Greek may be subsequently taken in a supplemental examination. The mother tongue and national history form the central field of attention. The gymnasium in the canton of Berne consists of a three-class common lower form without Latin and Greek, and a five-grade upper form branching into literary and realistic divisions, of which only the first branch has Latin as obligatory and Greek as elective. At the final examination in the St. Gall Canton school and in the Lucerne Lyceum Greek is placed as an elective; in Basel it is required of future medical students."

During the last ten years, undoubtedly the question relating to the overburdening of pupils has rightfully secured a foremost rank in the struggle. The people have taken up the cry of "Ueberbürdung," and the cause has found many able champions among schoolmen. The attitude and action of the Emperor on this question have been most significant. He has begun to fear that the overpressure in the schools is endangering the physical health of pupils and jeopardizing the future defence of the country. Then, too, the superabundance of their studies has crowded the study of the mother tongue to the wall, and indirectly the patriotic teachings necessary for the security of legal citizenship has been crowded out. The programme of the Royal Cadet Corps, as revised by his order, "lays special stress upon modern languages and modern history."*

* Dr. W. H. Burnham, Ped. Sem., i, 1.

The Emperor's attitude toward these important questions may be best shown by direct quotations from some of his orders and speeches relating to the matter. The first quotations are made from his order of 1889. "I have for a long time thought of making use of the schools in their separate grades for combatting the spread of socialistic and communistic ideas. The prime idea of the schools will ever be to lay the foundations for a sound comprehension of both civic and social relations by cherishing reverence for God and the love of Fatherland. But I cannot fail to recognise that in a time when the errors and misrepresentations of social democracy are spread abroad with increased zeal, the school is called upon to make increased efforts to advance the recognition of the true, the real, and the possible in the world. The school must endeavour to create in the young the conviction that the teachings of social democracy contradict not only the divine commands and Christian morals, but are, moreover, impracticable, and in their consequences destructive alike to the individual and to the community."*

In March, 1890, Minister of Education von Gossler first mentioned the idea of bringing together in joint session the prominent exponents of both the classical and realistic instruction for the purpose of discussing, under parliamentary rules, the great questions that were pressing upon them. It was thought that in this way more would be accomplished than by debate and harangue in popular assemblages. On

* See Bureau of Education Reports, i, 1889-'90.

the 31st of October the Minister issued an invitation to prominent schoolmen to attend a conference in Berlin in December, for the purpose of discussing matters pertaining to the welfare of the schools.

This conference was composed of forty-four members representing the two antagonistic forces. The reformers, however, considered it a "packed" conference. The people had been led to believe that they were at last to have an official hearing, and that their cause would receive due recognition. But as soon as the names of the participants and the constitution were made known, the reformers lost all hope. One gymnasial advocate said: "In fact, the list of names and the questions (proposed for discussion) contain the decision." There was a noticeable lack of real-gymnasium supporters, the most prominent ones in the country not having been summoned. On the other hand, there was a strong array of supporters of the classical gymnasia. Much might be expected in the nature of general reforms, but no pronounced changes in the customary school organization. Frick and Schiller were there to champion the question of better pedagogical preparation of teachers, and there were many ready to take up the cause against overpressure and nearsightedness. But, as Professor Thurber observes, "The friends of the new German school, however, expected little, and they would have been less disappointed than they were but for the energetic interference of the Emperor."

The questions which came up before the conference were as follows:

1. Are the varieties of high school existing to-day to be maintained in their present separation, or is it advisable to unite (*a*) the gymnasium and the real-gymnasium, (*b*) the real-gymnasium and the higher real-school?

2. Can a common foundation be provided for the three existing classes of schools (gymnasias, real-gymnasias, schools without Latin) or for two of the same? In the latter case is it recommended (*a*) to extend the existing uniformity for the three lower classes of the gymnasias and real-gymnasias to Lower Secunda (inclusive), and to introduce from Upper Secunda upward the study plan of the higher real-school? (This is providing for a combination of the real-gymnasium with the real-school.) (*b*) Or to push forward Latin in the real-gymnasium to Lower Tertia, and to amplify the three lower classes that do not study Latin into a higher burgher school? (This is providing for a combination of the real-gymnasium with the higher burgher school.)

3. Is it advisable to reduce the number of hours devoted to the ancient languages in the study plan of the gymnasias, and so make it possible to reduce the total number of hours of instruction in the three lower classes, to introduce English as an elective study, and to make drawing obligatory above Quarta? Should Latin composition as a prime accomplishment, and the written translation of Greek, be dropped in Prima at the same time that this reduction of hours is introduced?

4. Is it advisable to retain in the study plan of the real-gymnasium the increased amount of Latin

introduced in the year 1882, or should a lessening of the same, and thereby a reduction in the total number of school hours, be brought about?

5. Is it advisable, (*a*) in places where there are only gymnasia or real-gymnasia, to introduce, instead of Latin, an increased amount of instruction in German and modern foreign languages, according to the local needs; (*b*) in places where there are only high schools that do not teach Latin, to add to their three lower classes, according to local needs, instruction in Latin; (*c*) to reduce all institutions with seven grades (progymnasia, real-progymnasia, real-schools) to institutions with six grades; (*d*) to shape alike the study plans of the real-schools and the higher burgher schools, and to arrange both so that, without prejudice to the different methods of treatment of the subjects of instruction and to the termination of the course of education, the continuance of the same in the higher real-school shall be made easier?

6. Is it advisable to introduce in those institutions arranged with a course of study running through nine years, an earlier relative termination after the sixth year of the course in the interests of the scholars that enter into practical life before the completion of the nine years' course?

7. Are still other standards desirable for the furthering of successful education, with regard to (*a*) the maximum size of the classes, (*b*) the number of scholars and of classes allowed in each institution, (*c*) the complete division of Tertia and Secunda in two classes, according to years, and (*d*) the number of hours of duty of the teacher?

8. In how far is it possible, even with a reduction in the total number of school hours, by means of intensive methodical instruction, to transfer the greater part of the home work to the school, especially in the lower classes?

9. What is to be done for the further development of the instruction in gymnastics, which at present is for the most part given two hours a week and generally to large divisions, and what other provisions for the physical development of the youth are to be applied?

10. Can the final examinations be dispensed with? In case they can not be done away with entirely, should simplifications be introduced, and what ones?

11. What changes are desirable with reference to the scientific training of the coming teachers in higher schools?

12. Through what means can the higher institutions of learning co-operate to the greatest extent possible with the family to influence the moral development of their pupils?

13. What changes seem advisable in the privileges of the institutions (*a*) with a course of study extending over nine years, (*b*) in the higher burgher schools (to be discussed as fitting for the different employments)?

14. If in the future the right to one-year service can be obtained earlier in the higher burgher schools than in the other higher schools by reason of the earlier termination of their course of study, and changes are introduced for the benefit of these higher burgher schools in regard to other privileges, then the

demand for this class of schools will increase. What general rules shall be adopted for meeting this demand? Shall it be the combination of higher burgher schools with existing institutions, the transforming a part of the latter, or the building of new higher burgher schools by the state or with state support?

The Emperor was one of the most interested persons in the entire assemblage. During the session he made a most significant address. Professor Thurber writes that "the scene therein presented, of the most powerful monarch in the world addressing an assemblage of schoolmen on the details of school management, must be regarded as one of the most striking and remarkable episodes in educational history." To indicate further the Emperor's attitude upon this absorbing question, quotations from his addresses are here given.

" . . . In the first place, I wish to observe that we have to do here, above all, not with a political school question, but entirely with technical and pedagogical measures which we must adopt in order to fit the growing generations for the demands of the present, for the position of our Fatherland, and of our life in the world at large. . . . I have, on my part, proposed some questions, . . . and I hope they will receive due consideration. . . . First, school hygiene outside of gymnastics—a matter that must be considered very carefully; then diminution in the subjects of study (consideration of what must be cut out); further, the plans of instruction for the individual studies; then the system of teaching, the organization—the chief points have already been

brought forward. Sixth, is the crowding with unfit pupils (in the nine-year schools) removed by the examinations? And seventh, is overburdening avoided for the future? Eighth, what plan have we for control when the work is finished? Only regular and extraordinary inspection by different higher officials. . . . The last period in which our school was a standard for our whole national life and our development was in the years 1864 or 1866 to 1870. Then the Prussian schools and the Prussian teaching faculties were the bearers of the idea of unity that was preached everywhere. All graduates who came out of the schools and began their volunteer military service or entered upon active life were united upon this one point: The German empire shall be again established, and Alsace and Lorraine won back again. That ceased with the year 1870. The empire is united: we have what we wanted to gain, and there the matter has rested. Starting from the new basis, the school ought now to animate the youth and make clear to them that the purpose of the new political condition is that the empire may be preserved. . . . If one should converse with one of the gentlemen concerned, and seek to explain to him that the young man must, after all, to a certain extent, receive a practical preparation for life and its problems, the answer is ever, that that is not the task of the schools; the chief object is the gymnastics of the intellect, and if these gymnastics are properly pursued the young man will be in a condition to accomplish with these gymnastics all that is necessary for life. I believe that we can be no longer de-

luded by this doctrine. . . . Whoever has been in the gymnasium himself, and has caught a glimpse behind the scenes, knows what is lacking there. Above all, the national basis is lacking. We must take the German language as the foundation for the gymnasium; we ought to educate national young Germans and not young Greeks and Romans. We must depart entirely from the basis that has existed for centuries—from the old monastic education of the middle ages, where the standard was Latin with a little Greek added. . . . The so-called ‘hunger candidates,’ especially the journalists, are multifariously ruined gymnasiasts; they are a great danger for us. This abundance of gymnasia, that is already too great, like a saturated field that can take in no more, must be disposed of. On that account I will not sanction another gymnasium that cannot prove absolutely its right to existence and its necessity. We have enough already. We need a second class of schools with practical culture but no real-gymnasia. The real-gymnasia are half-and-half institutions; through them a half-and-half culture is obtained, and it gives only a half-and-half preparation for life afterward. . . . Each scholar in the schools has about 25,000 hours of school and home study, and in this number only about 657 hours for gymnastics. That is a preponderance of intellectual work which must certainly be reduced. . . . The statistical returns concerning the spread of school diseases, especially nearsightedness, are truly alarming. . . . The number of the nearsighted in some classes in Prima rises as high as 74 per cent.”

In his own class in Cassel, "out of twenty-one scholars eighteen wore spectacles, and there were two of them who could not see as far as the black-board with their spectacles." The Emperor said with great earnestness in concluding: "Meine Herren, die Männer sollen nicht durch Brillen die Welt ansehen, sondern mit eigenen Augen, und Gefallen finden an dem, was sie vor sich haben, ihrem Vaterlande und seinen Einrichtungen. Dazu sollen Sie jetzt helfen."

It would be interesting to follow the discussions that arose during that long session of the conference (December 4 to 17, 1890), and to give quotations from the many interesting speeches that were made, but the reader who is interested is referred to the 800-page stenographic report,* or to the excellent extracts made by Professor Thurber,† from which I have quoted many of the above translations.

Professor Preyer said: "One thing is certain, at least, that every possible shade of opinion, every conceivable idea, every practicable and every impracticable scheme has at last had a hearing and been brought to the attention of the public." The great petition, with 22,409 signatures, to the Prussian ministry, and which contained the signatures of 300 gymnasium teachers, 300 university professors, 300 clergymen, and 1,500 physicians, he regarded as a "monster petition, which was alike excellent in form and content, as an unmistakable proclamation of the nation, as a fact in the history of civilization."

* Verhandlungen über Fragen des höheren Unterrichts.

† Bureau of Education Reports, 1889-'90.

3. CHANGES WROUGHT.

The resolutions passed at the close of the conference need not be given here.* They were only advisory, while we may regard the new courses of study, officially published in 1891, as more nearly representing the real results. The conference was purposely so made up by the Minister von Gossler that the conservative element was much in the majority,† and hence the hopes of the friends of real-school education could not possibly be realized. Had it not been for the great influence of the Emperor the changes recommended probably would have been materially different—more prejudicial to the classical side. Partly as a result of the conference, and partly, probably almost wholly, as the result of von Gossler's views,‡ a new course of study was issued for Prussia, December 1, 1891, which went into effect at Easter, 1892.

The main features of change wrought by the long struggle, as exhibited in the new order, may be summarized as follows:

1. In general, the result was not favourable to the friends of the real-gymnasium, this class of school being forced nearer to the level of the higher real-school by the reduction of the amount of Latin. (It must be remembered that the real-school men wished to retain Latin, but to have no Greek, and yet have

* For a full account of these resolutions see Professor Thurner's article in the Report of the Commissioner of Education, 1889-'90, p. 389 *et seq.*

† Ziegler, *Die Fragen der Schulreform*, p. 12.

‡ Paulsen, *Geschichte des Gelehrten Unterrichts*, p. 595.

ther schools on a par with the gymnasia in respect to privileges.)

2. The amount of Latin was reduced about one fourth in the gymnasium and about one seventh in the real-gymnasium. German was made more prominent in all schools.

3. The total number of hours of instruction was decreased in all schools—sixteen hours in the gymnasia, twenty-one hours in the real-gymnasia, and eighteen hours in the higher real-schools.

4. German and German history were made more of a centre of correlation. The German composition was made obligatory, while Latin composition was no longer required. “Der deutsche Aufsatz ist als Erbe der lateinischen eingesetzt. . . . Das Gymnasium will jetzt sein eine deutsch-humanistische Schule.”*

5. More time and care were to be given to bodily exercise.

6. The higher real-school graduates were permitted to study mathematics and natural science in the universities.

7. The certificates of the real-schools, real-gymnasia, and higher burgher schools with six-year courses (or more) were to admit to the one-year voluntary military service and to subaltern positions.

8. A final examination (*Abschlussprüfung*) was to be allowed at the close of L. II for those who wished to secure the same privileges as the six-year

* Paulsen, Ueber die gegenwärtige Lage des höheren Schulwesens, pp. 7, 8.

courses offered. Previously, pupils had received these privileges on being promoted from L. II to U. II. Many preferred this to taking the examinations at the six-year schools, and hence the lower classes of the nine-year schools were overcrowded—"Schülerballast."

9. In the final examination Latin composition was to be no longer required, and the subject matter required in any branch of examination was to extend only through the work done in the last two years.

10. Not more than forty pupils in the lower classes nor more than thirty in the higher were to receive instruction together. Twenty-two hours were to be the limit of weekly class instruction given by teachers.

The following are among the most important measures recommended by the conference :

1. That in the future only two classes of schools be maintained—the classical gymnasia and the schools with no ancient languages. These latter would be higher real-schools and higher burgher schools. The name real-school was proposed for the higher burgher schools.

2. That schools having nine-year courses which have very poor attendance beyond Lower Secunda be transformed into higher burgher schools. (Such a state might be caused by the exodus to the higher burgher schools for the purpose of obtaining the military privileges through graduation, which is deemed easier than by taking an examination therefor at the close of the sixth year in the nine-year

institutions. It might be caused also by pupils leaving upon examination. Either condition would justify the change.)

3. In cities which possess several gymnasial and real-gymnasial institutions measures are to be taken as far as possible to transform one of these institutions into a higher burgher school.

4. In cities which as yet possess no secondary schools, preference is to be given to the higher burgher school when a secondary school is established.

5. The state is to support the establishment and maintenance of the higher burgher schools according to the same principles as have hitherto governed the gymnasial institutions, especially during the period of transition. The state is to further higher burgher schools by the application of Government means and to come to the financial aid of the less capable cities in founding such institutions.

6. Teachers in the higher burgher schools are to be paid as well as in the nine-grade institutions.

7. The courses of study in the higher burgher schools are to be arranged so that pupils on finishing these may pass to the higher real-schools without inconvenience.

8. In places where there are only higher schools without Latin, instruction in Latin should be added in the three lower classes.

9. To reduce all schools with seven grades (progymnasia, real-progymnasia, etc.) to six-grade schools, and to give a final examination at the close.

10. A common substructure (as proposed in the

Einheitsschule) for gymnasia and non-classical schools is not to be permitted.

11. Home work ought to be diminished.

12. No secondary school should have more than four hundred students.

13. Better pedagogical preparation of teachers is desirable. Teachers also ought to be accorded a higher social status.

14. School instruction in modern foreign languages should lead to a thorough oral and written mastery of them.

15. The moral culture of pupils should be furthered by attention to general discipline, by fostering religion and patriotism, and by greater co-operation with parents. The system of special teachers should also be limited, and an attempt be made to better understand the individuality of pupils.

As a result of the general ferment, changes were made in all four of the kingdoms of Germany during the year 1891.

All the other three accomplished changes even before Prussia. Württemberg announced a change, February 16, 1891; Bavaria, July 23rd, and Saxony, December 6th.* The changes made by the new courses were more sweeping in Prussia than in any other state, especially with regard to Latin and Greek.

In all the kingdoms the changes made were quite similar to those wrought in Prussia. In no other

*The change in Prussia was effected December 1st, but was not published until 1892, and went into effect at Easter.

case were they quite so radical. An examination of the tables showing the present courses, and the table exhibiting changes effected in 1892 reveals the facts that Prussia now has a less amount of Latin in her gymnasia and real-gymnasia, and has less Greek in the gymnasia than Saxony, Württemberg, or Mecklenburg. No state has less than Prussia. Drawing was considerably increased in most of the states. English, though not increased in the gymnasia, was somewhat advanced by requiring all schools to offer it as an elective.

The following tables show changes made by the latest plan of studies, and the exact amount required in the various schools in Prussia, during the various periods of development in the last century.

*Table showing Changes from Former Gymnasium Courses
by the Plan of Study issued in 1892.*

	Prussia.	Bavaria.	Saxony.	Württem- berg.	Baden.	Pr. R.-gym.	Pr. Hr. R. S.
Religion.....	± 0	± 0	- 1	- 2	± 0	± 0	± 0
German.....	+ 5	+ 1	+ 2	+ 4	- 2	+ 1	+ 4
Latin.....	-15	- 7	- 5	-21½	- 1	-11	
Greek.....	- 4	± 0	± 0	- 2	+ 0		
French.....	- 2	+ 2	- 2	+ 2	± 0	- 3	- 9
History.....	- 2	- 3	- 2	- 1	± 0	- 2	- 2
Geography.....	- 2	- 3	- 2	- 1	± 0	- 2	- 2
Natural science.	- 2	.....	.....	+ 5	± 0	± 0	- 1
Physics.....	.....	- 9	- 1	- 1	± 0	± 0	- 1
Chem. and min.	+ 2	.....	.....	+ 3	± 0	± 0	+ 2
Mathematics...	± 0	+ 4	- 1	- ½	± 0	- 2	- 2
Writing.....	± 0	- 5	± 0	- 2	- 4	± 0	± 0
Drawing.....	± 2	+ 4	± 0	± 0	+ 8	- 2	- 8
Singing.....	+ 0	± 0	± 0	± 0	± 0	± 0	± 0
Gymnastics....	± 0	± 0	± 0	± 0	± 0	± 0	± 0
English.....	± 0	± 0	± 0	± 0	± 0	- 2	- 1
Hebrew.....	± 0	± 0	± 0	± 0	± 0	± 0	

The sentiment of the people everywhere, as shown in the character of the schools they were

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Table showing Total Number of Hours for Each Subject, as determined in the Courses of Study legalized at the Indicated Times (Prussia).

	GYMNASIUM.						R.-GYM.			HIGHER REAL- SCHOOL.	
	1812.	1837.	1848.	1859.	1882.	1891.	1859.	1882.	1891.	1882.	1891.
Religion.....	20	18	16	20	19	19	21	20	19	19	19
Latin.....	76	86	47	86	77	62	44	54	43		
Greek.....	50	42	28	42	40	36					
German.....	44	22	25	20	21	26	29	27	28	30	34
French.....		12		17	21	19	34	34	31	56	47
Mathematics.....	60	33	22	32	34	34	47	44	42	49	47
Natural science.....		10		8	10	8	10	12	12	13	12
Physics.....	20	6	21	8	8	10	10	12	12	14	13
Chemistry.....							6	6	6	9	11
History.....											
Geography.....	30	24	23	23	28	26	30	30	28	30	28
Drawing.....	10	6		6	6	8	20	18	16	24	16
Writing.....	8	7		4	4	4	7	4	4	6	6
Phil. prop.....		4	2								
Hebrew.....		8			Opt	Opt					
English.....					Opt	Opt	20	20	18	26	25

building during this period,* was also most significant. By establishing and maintaining real-schools at their own expense, when the Government would bear most of the expense for gymnasia, they plainly showed that what the Government was furnishing was not acceptable, and that they were determined to secure what they deemed more suited to their needs, cost what it might.

In all the states the growth of real-schools and higher real-schools, as compared with gymnasia and real-gymnasia, has been amazing during the last decade and a half. In 1882 the number of pupils

* As previously pointed out, the gymnasia are nearly all state institutions. The state builds few real-schools; these are mostly maintained at local expense.

Table showing Comparative Numbers in the Classical and the Non-classical Schools in 1863 and 1890.

STATE.	NUMBER IN CLASSICAL GYMNASIA.		NUMBER IN REAL-SCHOOL WITH LATIN.		NUMBER IN REAL-SCHOOL WITHOUT LATIN.		POPULATION.	
	1863.	1890.	1863.	1890.	1863.	1890.	1863.	1890.
Prussia.....	45,403	80,979	20,732	34,405	.....	19,893	18,476,500	29,855,281
Bavaria.....	8,863	18,002	.....	452	3,589	10,938	4,807,440	5,591,982
Saxony.....	1,989	5,636	1,706	2,136	403	7,002	2,337,102	3,502,084
Württemberg.....	4,442	8,425	.....	.....	4,402	8,593	1,748,328	2,036,532
Baden.....	3,007	4,593	2,221	3,381	.....	2,613	1,369,291	1,957,807
Hesse.....	982	2,407	.....	1,083	1,407	3,292	849,436	992,868
Mecklenburg-Schwerin.....	1,346	1,422	637	1,407	105	572	546,639	578,342
Saxon Prussia.....	337	735	131	510	279	555	273,252	326,001
Mecklenburg-Strelitz.....	442	665	200	214	.....	.....	99,000	97,969
Oldenburg.....	485	911	74	.....	180	460	298,538	351,968
Braunschweig.....	577	1,719	.....	338	379	1,562	292,508	403,773
Saxe-Weimar.....	253	286	280	319	.....	293	177,836	223,892
Saxe-Altenburg.....	122	506	.....	193	.....	105	139,062	170,864
Saxe-Coburg.....	99	311	101	251	.....	.....	47,618	59,297
Saxe-Gotha.....	361	340	173	91	406	422	115,180	147,296
Anhalt.....	1,121	964	489	463	193	(1888) 163	232,592	271,963
Schwarzburg-Rudolstadt.....	147	151	118	229	.....	.....	71,913	85,893
Schwarzburg-Sonderhausen.....	227	340	.....	360	299	.....	65,761	75,510
Waldeck-Pyrmont.....	58	167	71	100	.....	.....	58,875	67,283
Reuss ältere Linie.....	.....	161	.....	37	.....	.....	.....	62,751
Reuss jüngere Linie.....	305	306	100	400	.....	.....	83,360	110,811
Schaumburg-Lippe.....	167	208	.....	43	.....	.....	30,744	39,103
Lippe.....	291	403	24	41	.....	.....	111,336	128,495
Lübeck.....	335	551	91	118	505	587	47,615	76,485
Bremen.....	230	816	338	620	858	1,245	101,984	179,714
Hamburg.....	184	1,000	.....	718	264	3,671	263,920	622,530
Alsace-Lorraine.....	1,392	4,013	582	.....	(1873) 816	2,513	1,517,491	1,603,606

in the secondary schools of Prussia who were pursuing Latin was nine times that of the pupils not studying it. By 1892 the proportion had so changed that the ratio was only five to one, and by 1894 the proportion stood three Latin pupils to one non-Latin pupil.*

In Baden, as the following tabulation indicates, the pendulum has swung steadily in the non-Latin direction, with no less momentum and through as great amplitude as in Prussia.

Distribution of Pupils in Various Classes of Schools in Baden from 1882 to 1895.

	Gymnasien.	Real-gymnasien.	Real-schools.	Total.
1882-'83	4,950 = 53.2%	2,949 = 31.6%	1,406 = 15.2%	9,305
1887-'88	5,263 = 47.7%	2,565 = 23.2%	3,212 = 29.1%	11,039
1888-'89	5,107 = 45.7%	2,495 = 22.4%	3,564 = 31.9%	11,166
1889-'90	4,759 = 43.8%	2,394 = 22.0%	3,724 = 34.2%	10,877
1890-'91	4,637 = 42.8%	2,376 = 21.9%	3,838 = 35.3%	10,871
1891-'92	4,548 = 41.1%	2,146 = 19.4%	4,372 = 39.5%	11,066
1892-'93	4,494 = 39.6%	2,089 = 18.4%	4,773 = 42.0%	11,356
1893-'94	4,400 = 38.8%	1,813 = 15.7%	5,233 = 45.5%	11,506
1894-'95	4,421 = 37.9%	1,652 = 14.2%	5,578 = 47.9%	11,651

Gustave Wendt, Baumeister's Handbuch, etc., p. 185.

* Baumeister's Organisation des höheren Unterrichts, pp. 67, 68.

CHAPTER IV.

PRESENT COURSES OF STUDY.

1. INTRODUCTORY.—SCHOOL PROGRAMMES IN VARIOUS STATES.

WE shall next proceed to an examination of the courses of study in the secondary schools as they appear in the official programmes published by the several states. Although there is quite a similarity among the courses of all the states, especially of the four kingdoms (Prussia, Bavaria, Saxony, Würtemberg), yet the variations forbid the taking of any single one as a standard without showing the differences, and justify the more detailed exposition of each one separately. However, as methods of teaching are very similar and the aim to be attained almost identical in the several states, the variations will be exhibited mainly through comparative tables, and a general discussion, which will serve for all alike, will accompany the tables.

The courses of study are outlined by the Ministerium of each state. They represent the exact amount of time that shall be given to the individual subjects, and the distribution of this time throughout the school course. A detailed outline always accompanies the time table. This outline indicates the general minimum amount of each subject that

the schools are expected to cover, as well as general ends to be attained and methods of attaining them. Of course, the teachers are given much latitude in the method of procedure; in fact, older teachers may be said to have entire freedom in this respect. The choice of parts of subjects is in a measure left to the individual schools; yet, since the official programmes indicate the general topics, there is not much variation in the selection of topics in the various schools in a given state. Each school, in the main each teacher, is left free in the selection of text-books and the appliances to be used.

The courses of study in the various states have essentially the same end in view, and they are considered to be of equal value. This is shown by the fact that the certificate from a gymnasium in any one of the Bundesstaaten is recognised (since 1889) as giving the same privileges in all the other states. The same is true of the certificate of the real-gymnasia from most of the states. However, since there is considerable diversity among courses, some are not universally valid, but are recognised only in the state in which they are granted. This is true especially of the Württemberg real-gymnasium certificates.* The certificates of maturity from the upper real-schools are recognised also only in the state which issues them. All higher schools have essentially the same courses in religion, German, history, and geography, and the instruction in these aims to reach the same ideals in all the different forms of schools.

* See Centralblatt, 1889, p. 224.

They all strive to develop morality, fidelity, obedience, and love for the Fatherland. Through a knowledge of the functions of the state and the duty of its citizens they aim to develop upright citizens and obedient, country-loving subjects. The school programmes show a great preponderance of national and local geography and history. Enough of foreign civilization is treated of to insure a proper perspective in studying governments, and also to give in these matters the fundamentals of instruction necessary to liberal culture. The high position to which art and music have attained in Germany receives assurance of continued security by the lofty ideals inculcated in the minds of pupils throughout the course. The æsthetic culture to be derived through subjects of school study is nowhere so successfully imparted as in Germany. History, literature, Nature studies, and even mathematics, provide material for æsthetic culture as well as intellectual development.

It will be noticed from the comparative table that there is a great similarity among gymnasial courses throughout the different states of the empire. There are no very great deviations except in Würtemberg, which has in its programme eighty-one hours of Latin and forty hours of Greek, being from ten to fifteen hours more of Latin and about four hours more of Greek than the average amount in the other states. There are apparent variations in the amounts of natural science and in the history and geography work given in the various states, but those differences arise principally because of the different ways

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Table showing Amount of Time devoted to Each Subject in the Gymnasia of Eight States.

	Prussia.	Bavaria.	Saxony.	Wurttemberg.	Baden.	Hesse.	Mecklenburg.	Alsace-Lorraine.
Religion	19	18	20	18	18	18	20	18
German	26	27	25	30	22	27	25	25
Latin	62	66	73	81	72	68	71	71
Greek	36	36	42	40	36	36	40	36
French	19	10	18	18	20	23	24	24
History	26	16	18	23	26	27	20	25
Geography	8	9	9	6	10	10	..	10
Nature lessons.....	8	5	8	8	8	8	24	8
Physics	10	7	8	8	8	8	36	35
Chem. and min.....	24	26	33	30	33	35	36	35
Mathematics	4	4	3	7	4	5	4	2
Writing	8	4	10	7	10	8	4	4
Drawing	4	..	6	4	14	18	..	6
Singing	27	18	18	16	18	..	*	18
Gymnastics	4e	..	6e	6e	8e	4e	6e	e
English	or	..	or	or	or	or	or	or
Hebrew	4e	..	6e	6e	8e	4e	6e	e

NOTE.—The hours indicate an equivalent of so many hours per week for one year—e. g., five hours = to five hours a week for one year, or one hour a week for five years; or again, sixty-two hours (for Latin in Prussia) means sixty-two hours a week for one year, or nearly seven hours per week for nine years, etc.
e = elective.

* Not continued in all places on account of lack of appliances.

Table showing Amount of Time devoted to Each Subject in the Real-Gymnasia of Seven States.

	Prussia.	Bavaria.	Saxony.	Wurttemberg.	Baden.	Hesse.	Mecklenburg.
Religion	19	18	21	14	18	18	18
Latin	43	60	54	74½	56	55	53
German	28	29	29	20	26	33	28
French	31	29	34	27	26	31	31
English	18	13	18	11	18	18	18
History	28	16	18	22½	14	14	30
Geography	42	10	16	59	10	15	42
Mathematics	12	7	16	8½	10	12	12
Natural history	12	6	12	8½	8	12	12
Physics	6	5	6	5	4	6	6
Chem. and min.....	4	4	4	5	4	4	4
Writing	16	23	16	25½	18	18	16
Drawing	4	Opt.	14	..	14	18	18
Singing	27	18	18	..	18	18	18
Gymnastics	27	18	18	..	18	18	18

Table showing Amount of Time given to Each Branch in the Real-Schools of Eight States.

	Prussia.	Bavaria.	Saxony.	Wurttemberg.	Baden.	Hesse.	Mecklenburg.	Alsace-Lorraine.
Religion	13	13	15	*	18	12	12	12
German	28	27	31	.....	39	23	23	29
French	31	27	28	.....	46	20	25	28
English	13	10	16	.....	24	12	13	14
Arith. and algebra..	13	13	13	.....	23	23	14	13
Other mathematics..	28	18	31	.....	53	11	19	30
History	19	8	22	.....	17	12	21	10
Geography	10	10	10	.....	10	12	21	13
Nature lessons.....	10	6	10	.....	10	8	12	10
Physics	8	7	12	.....	13	6	4	7
Chem. and min.....	..	6	12	.....	8	6	2	..
Writing	6	3	7	.....	6	6	6	6
Drawing	10	22	12	.....	16	14	8	10
Singing	14	12	9	.....	18	12	12	6
Gymnastics	18	12	12	.....	18	12	12	12

* The courses of the ten real-schools with two additional years correspond to the first eight classes of the higher real-schools. Besides these, there are sixty-three schools with various plans. (Rethwisch, *op. cit.*, p. 130.)

of dividing the subjects. One school may have much under the head of Nature lessons and little under the topic physics, while in another case it may be just the reverse. Still the two may give almost identical courses, since there is no sharp dividing line between the sciences, and much of physics may be included under the term Nature lessons, and *vice versa*.

The most noticeable differences between the gymnasia and the real-gymnasia are in the relative amounts of the classics and the sciences. The real-gymnasia have abandoned all Greek and very materially reduced the amount of required Latin. More mathematics and natural science are introduced, while the general fundamental studies remain about the same in the two. Many of the gymnasia offer no chemistry nor mineralogy, while all the real-gym-

nasia offer of these about three hours weekly through a period of three years. More thorough work is given in the real-gymnasium in physics, and in mathematics usually one year of five weekly hours is offered in analytic geometry and descriptive geometry. The real-gymnasium has fully fifty per cent. more time devoted to French than the gymnasium, and English is taken as a required study three hours weekly during the last six years of the course.

The real-school curriculum is similar to the first six years of the real-gymnasium courses, with the exception that the real-school course contains no Latin but more French during the corresponding years.

The higher real-school contains three years additional to the ordinary real-schools and, as previously stated, prepares for entrance to the university in the natural sciences and mathematics. Pupils who have completed a real-school course may enter a higher real-school of another city for the last three years of the work if no higher real-school is located in their own. The progymnasium takes up the first six or seven years of a gymnasial course, and is advantageous in that pupils may enter a gymnasium and complete their preparation for the university; the real-progymnasium takes up the realistic side of the work and is simply the first six or seven years of a real-gymnasium.

For purposes of comparison and reference I subjoin detailed official programmes of Prussia, Saxony, Bavaria, Baden, and Württemberg. An attempt is made to exhibit all the different types of secondary-school curricula existing in the empire. The cities

must all conform to state requirements unless specially permitted to make minor deviations therefrom to suit local needs. Whatever deviations there are from general state regulations are very slight.

*Weekly Hours devoted to Each Study in the Prussian
Gymnasia (since 1892).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	3	3	2	2	2	2	2	2	2	19
German	4	3	3	2	2	3	3	3	3	26
Latin	8	8	7	7	7	7	6	6	6	62
Greek .....	..	..	6	6	6	6	6	6	6	36
French .....	..	4	3	3	3	3	2	2	2	19
History	2	2	2	2	2	2	3	3	3	26
Geography	2	2	1	1	1	..	..	..	..	26
Mathematics	4	4	3	3	3	4	4	4	4	34
Physics .....	..	..	..	2	2	2	2	2	2	10
Elementary nat- ural science	2	2	2	2	..	..	..	..	..	8
Writing	2	2	..	..	..	..	..	..	..	4
Drawing	2	2	2	2	2	..	..	..	..	8
Gymnastics	3	3	3	3	3	3	3	3	3	27
English .....	..	..	..	..	..	..	..	2	2	4
or Hebrew .....	..	..	..	..	..	..	..	2	2	4
Total*	25	25	28	30	30	30	28	28	28	252

*Weekly Hours devoted to Each Study in the Baden
Gymnasia (since 1883).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	2	2	18
German	3	3	2	2	2	2	2	3	3	22
Latin	9	9	8	8	8	8	8	7	7	72
Greek .....	..	..	6	6	6	6	6	6	6	36
French .....	..	4	3	3	3	3	3	2	2	20
History .....	..	2	2	2	2	3	3	3	3	18
Geography	2	2	1	1	1	..	..	..	..	8
Mathematics	4	4	3	3	3	4	4	4	4	33
Natural science	2	2	2	2	2	2	2	2	2	18
Phil. propædæutics ..	..	..	..	..	..	..	..	1	1	2
Hebrew (elective) ..	..	..	..	..	..	(2)	(2)	(2)	(2)	(8)
English (elective) ..	..	..	..	..	..	(2)	(2)	(2)	(2)	(8)
Writing	2	2	..	..	..	..	..	..	..	4
Drawing	2	2	2	2	2	(2)	(2)	(2)	(2)	10 + (8)
Singing	2	2	2	..	..	2	2	2	2	14
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*	26	26	27	31	31	30	30	30	30	261

* Exclusive of electives, singing, and gymnastics.

172 SECONDARY SCHOOL SYSTEM OF GERMANY.

Weekly Hours devoted to Each Study in the Gymnasia in Saxony.

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	3	3	2	2	2	2	2	2	2	20
German	4	3	3	2	2	2	3	3	3	25
Latin	9	9	8	8	8	8	7	8	8	73
Greek .....	..	..	..	7	7	7	7	7	7	42
French .....	..	..	2	3	2	2	2	2	2	18
History	2	2	5	2	2	2	2	2	2	18
Geography	2	2	2	2	1	..	..	..	..	9
Mathematics	3	4	3	3	4	4	4	4	4	33
Natural history	2	2	2	1	1	..	..	..	..	8
Physics .....	..	..	..	..	..	2	2	2	2	8
English (elective) .....	..	..	..	..	..	..	(2)	(2)	(2)	(6)
Hebrew (elective) .....	..	..	..	..	..	..	or (2)	or (2)	or (2)	(6)
Drawing .....	..	2	2	2	2	2	..	..	..	10
Writing	2	1	..	..	..	..	..	..	..	3
Singing	2	2	2	2	..	..	..	..	..	8
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*	27	28	29	32	31	30	29	30	30	270

Weekly Hours devoted to Each Study in the Gymnasia in Bavaria (since 1891).

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	2	2	18
German	5	4	3	2	2	2	2	3	4	27
Latin	8	8	8	8	8	7	7	6	6	66
Greek .....	..	..	..	6	6	6	6	6	6	36
French .....	..	..	..	..	..	3	3	2	2	10
Arithmetic	3	3	3	2	4	4	5	5	4	33
Mathematics										
Physics										
History .....	..	..	2	2	2	2	2	3	3	16
Geography	2	2	2	2	1	..	..	..	..	9
Nature lessons	1	1	1	1	1	..	..	..	..	5
Drawing .....	..	2	2	..	..	..	..	..	..	4
Writing	2	1	1	..	..	..	..	..	..	4
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*	23	23	24	25	26	26	27	27	27	228

* Singing, gymnastics, and electives not counted.

*Weekly Hours devoted to Each Study in the Württemberg
Gymnasia (since 1891).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	2	2	18
German	3	3	2	2	2	2	2	3	3	22
Latin	10	10	10	10	10	8	8	8	7	81
Greek .....	..	..	..	7	7	7	7	6	6	40
French .....	..	..	..	2	2	3	3	2	2	14
Mathematics.....	4	4	4	3	3	4	4	4	4	34
Physics .....	..	..	..	..	..	2	2	2	2	8
History .....	..	2	1	1½	1½	2	2	2	2	14
Geography	1	1	1	1½	1½	1	..	..	..	7
Nature lessons	2	2	2	..	..	..	..	..	..	6
Drawing .....	..	..	1	2	2	..	..	..	..	5
Writing	2	2	2	..	..	..	..	..	..	6
Gymnastics.....	..	2-3	2-3	2	2-3	2	2	2	2	18-20
Total*.....	24	26	25	31	31	31	30	29	30	257

Philosophical propædæutics obligatory two hours weekly in Upper Prima. Hebrew, English, New Testament, free-hand drawing, sabre practice, or Italian may be elected as an hour or two extra from Lower Secunda on. Singing one hour weekly in three lowest classes. These would increase the totals.

*Weekly Hours devoted to Each Study in the Prussia
Real-Gymnasia (1892).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	3	2	2	2	2	2	2	2	2	19
German	3	2	3	3	3	3	3	3	3	28
and History (narratives).	1	1								
Latin	8	8	7	4	4	3	3	3	3	43
French .....	..	..	5	5	5	4	4	4	4	31
English .....	..	..	..	3	3	3	3	3	3	18
History	2	2	2	2	2	2	3	3	3	28
Geography	2	2	2	2	2	1	3	3	3	28
Mathematics	4	4	4	5	5	5	5	5	5	42
Natural history.....	2	2	2	2	2	2	..	..	..	12
Physics .....	..	..	..	..	..	3	3	3	3	12
Chem. and min.....	..	..	..	..	..	..	2	2	2	6
Writing	2	2	..	..	..	..	..	..	..	4
Drawing .....	..	2	2	2	2	2	2	2	2	14
Singing .....	..	2	2	..	..	..	..	..	..	4
Gymnastics.....	3	3	3	3	3	3	3	3	3	27
Total*.....	25	25	29	30	30	30	50	30	30	259

* Exclusive of singing and gymnastics.

174 SECONDARY SCHOOL SYSTEM OF GERMANY.

Weekly Hours devoted to Each Study in the Bavarian Real-Gymnasias (1891).

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	2	2	18
German	5	4	3	2	2	2	2	3	4	27
Latin	8	8	8	7	7	6	6	5	5	60
French .....	..	..	..	4	4	3	3	3	3	20
English .....	..	..	..	..	..	4	3	3	3	13
Arithmetic	3	3	3	3	4	6	6	5	5	38
Mathematics.....	3	3	3	3	4	6	6	5	5	38
Physics.....	..	..	..	..	..	..	2	2	2	6
Nature lessons	1	1	1	2	2	..	..	..	..	7
Chem. and min.....	..	..	..	..	..	..	..	2	3	5
History.....	..	..	2	2	2	2	3	3	2	16
Geography	2	2	2	2	2	..	..	..	..	10
Writing.....	2	1	1	..	..	..	..	..	..	4
Drawing.....	..	2	2	3	3	4	4	3	2	23
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*.....	23	23	24	27	28	29	31	31	31	247

Elective: Italian, instrumental music, singing, stenography. The first three years are the same as in the gymnasias. Several real-gymnasias have only the last six years' work, and admit from the gymnasias or from Latin schools.

Weekly Hours devoted to Each Study in the Saxony Real-Gymnasias (1897).

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion.....	3	3	3	2	2	2	2	2	2	21
German	4	4	3	3	3	3	3	3	3	29
Latin	8	8	6	6	6	5	5	5	5	54
French .....	..	4	6	4	4	4	4	4	4	34
English.....	..	..	..	3	3	3	3	3	3	18
Geography.....	2	2	2	2	2	2	2	..	..	16
History.....	1	1	2	2	2	2	2	2	2	18
Mathematics.....	5	4	5	6	4	5	5	7	7	48
Physics.....	..	..	..	..	2	2	2	3	3	12
Chemistry .....	..	..	..	..	..	..	2	2	2	6
Natural history.....	2	2	2	2	2	2	..	..	..	14
Writing.....	2	2	..	..	..	..	..	..	..	4
Drawing.....	2	2	2	2	2	2	2	..	..	16
Singing.....	2	2	2	2	2	1	1	1	1	14
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*.....	29	32	31	32	32	32	32	31	31	290

Stenography elective.

* Not counting gymnastics or singing.

Weekly Hours devoted to Each Study in the Baden Real-Gymnasias (since 1887).

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total
Religion	2	2	2	2	2	2	2	2	2	18
German	3	3	2	3	3	3	3	3	3	26
Latin	9	9	8	6	6	5	5	4	4	56
French .....	..	..	4	4	4	4	4	3	3	26
English .....	..	..	..	3	3	3	3	3	3	18
Geography	2	2	2	2	2	..	..	..	..	10
History .....	..	..	2	2	2	2	2	2	2	14
Mathematics	4	4	3	4	4	7	7	7	7	47
Physics .....	..	..	..	..	..	2	2	2	2	8
Chemistry .....	..	..	..	..	..	..	..	2	2	4
Natural history	2	2	2	2	2	..	..	..	..	10
Writing	2	2	..	..	..	..	..	..	..	4
Drawing	2	2	2	2	2	2	2	2	2	18
Singing	2	2	2	..	..	2	2	2	2	14
Gymnastics	2	2	2	2	2	2	2	2	2	18
Total*	26	26	27	30	30	30	20	30	30	259

Weekly Hours devoted to Each Study in the Prussian Real-School.

	VI	V	IV	III	II	I	Total.	Change.
Religion	3	2	2	2	2	2	13	± 0
German	5	4	5	4	4	3	28	+ 7
History (narrative)	1	1	..	..	..	..	..	..
French	6	6	6	5	4	4	31	- 9
English .....	..	..	..	5	4	4	13	± 0
History	2	2	2	2	2	2	19	- 3
Geography	2	2	2	2	1	2	..	..
Mathematics	4	4	5	5	5	5	28	- 1
Natural history	2	2	2	2	2	..	10	- 3
Physics, etc. ....	..	..	..	..	3	5	8	± 0
Writing	2	2	2	..	..	..	6	- 2
Drawing .....	..	2	2	2	2	2	10	- 2
Singing	2	2	..	..	..	..	4	..
Gymnastics	3	3	3	3	3	3	18	..
Total*	25	25	28	30	29	29	166	- 13

* Singing, electives, and gymnastics not counted.

176 SECONDARY SCHOOL SYSTEM OF GERMANY.

Weekly Hours devoted to Each Study in the Bavarian Real-Schools (since 1894).

	VI	V	IV	III	II	I	Total.	Change.
Religion.....	2	2	2	2	2	2	12	
German.....	6	5	4	4	4	4	27	+ 1
French.....	6	6	5	4	3	3	27	- 1
English.....	..	..	..	..	5	5	10	
Arithmetic.....	4	4	2	1	1	1	13	- 4
Geometry.....	..	..	3	5	5	5	18	
Physics.....	..	..	..	3	2	2	7	+ 1
Natural history.....	2	2	2	..	..	..	6	
Chem. and min.....	..	..	..	..	3	3	6	
History.....	..	..	..	2	2	2	8	
Geography.....	2	2	2	2	1	1	10	
Drawing.....	2	4	4	4	4	4	22	
Writing.....	2	1	..	..	..	..	3	- 4
Gymnastics.....	2	2	2	2	2	2	12	
Total*.....	26	26	26	27	32	32	181	- 7

Stenography, singing, instrumental music, and swimming may be elected.

Weekly Hours devoted to Each Study in the Saxony Real-School.

	VI	V	IV	III	II	I	Total.
Religion.....	3	3	3	2	2	2	14
German.....	8	6	6	5	4	4	33
French.....	..	6	6	6	5	5	28
English.....	..	..	..	4	4	4	12
History.....	1	2	2	2	2	2	11
Geography.....	2	2	2	2	2	2	12
Natural history.....	2	2	2	2	1	1	10
Chem. and min.....	..	..	..	..	3	3	6
Physics.....	..	..	..	..	2	2	4
Mathematics.....	5	4	6	6	7	7	35
Drawing.....	2	2	2	2	2	2	12
Writing.....	3	2	2	2	..	..	9
Gymnastics.....	2	2	2	2	2	2	12
Singing.....	2	2	2	2	1	1	10
Total*.....	26	29	31	33	34	34	186

Stenography elective from IV class on.

* Singing, electives, and gymnastics not counted.

*Weekly Hours devoted to Each Study in the Baden
Higher Real-Schools.*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	2	2	18
German	6	5	4	4	4	4	4	4	4	39
French	6	6	6	6	5	5	4	4	4	46
English .....	..	..	..	4	4	4	4	4	4	24
History .....	..	..	2	2	2	2	3	3	3	17
Geography	2	2	2	2	2	..	..	..	..	10
Natural history	2	2	2	2	2	..	..	..	..	10
Chem., min., geol. ....	..	..	..	..	..	2	2	2	2	8
Physics .....	..	..	..	..	2	2	3	3	3	13
Mathematics	5	5	5	5	5	7	7	7	7	53*
Drawing .....	..	2	2	2	2	2	2	2	2	16
Writing	2	2	2	..	..	..	..	..	..	6
Gymnastics	2	2	2	2	2	9	2	2	2	18
Total †	25	26	27	29	30	30	31	31	31	260

* Includes two hours weekly projective geometry, or "Darstellender Unterricht," as it is called.

*Weekly Hours devoted to each Study in the Higher Real-
Schools in Prussia.*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.
Religion	3	2	2	2	2	2	2	2	2	19
German and Historical narrative {	4 1	3 1	4	3	3	3	4	4	4	34
French	6	6	6	6	6	5	4	4	4	47
English .....	..	..	..	5	4	4	4	4	4	25
History .....	..	..	2	2	2	2	3	3	3	28
Geography	2	2	2	2	2	1	..	..	..	12
Mathematics	5	5	6	6	5	5	5	5	5	47
Nature lessons	2	2	2	2	2	2	..	..	..	13
Physics .....	..	..	..	..	2	2	3	3	3	11
Chem. and min. ....	..	..	..	..	..	2	3	3	3	6
Writing	2	2	2	..	..	..	..	..	..	16
Drawing .....	..	2	2	2	2	2	2	2	2	4
Singing	2	2	..	..	..	..	..	..	..	27
Gymnastics	3	3	3	3	3	3	3	3	3	
Total †	25	25	28	30	30	30	30	30	30	258
	a *						b			

* The six years' work included in "a" corresponds to the real-school; that included in "b" is additional for the higher real-school.

† Except singing and gymnastics.

178 SECONDARY SCHOOL SYSTEM OF GERMANY.

Weekly Hours devoted to Each Study in a Combination Real-School in Prussia.

	VI	V	IV	L. III	U. III	L. II	U. II	Special for business training.	L. I	U. I	Total.
Religion	2	2	2	2	2	2	2	..	2	2	18
German.....	6	5	4	4	4	4	4	2	4	4	41
German corre- spondence.....	..	..	..	..	..	..	..	2	..	..	2
French	6	6	6	6	5	5	4	..	4	4	46
French corre- spondence.....	..	..	..	..	..	..	..	2	..	..	2
French conversa- tion.....	..	..	..	..	..	..	..	2	..	..	2
English.....	..	..	..	4	4	4	4	..	4	4	24
English corre- spondence.....	..	..	..	..	..	..	..	2	..	..	2
English conversa- tion.....	..	..	..	..	..	..	..	2	..	..	2
Italian.....	..	..	..	..	..	..	2	3	2	2	9
Book-keeping .....	..	..	..	..	..	..	..	2	..	..	2
History.....	..	..	2	2	2	2	3	2	2	2	17
Geography.....	2	2	2	2	2	..	..	3	..	..	13
Natural history...	2	2	2	2	2	..	..	..	..	..	10
Chem., geol., min. ....	..	..	..	..	2	2	2	..	2	2	8
Physics.....	..	..	..	..	2	2	3	..	3	3	13
Mathematics.....	5	5	5	5	5	5	5	3	5	5	48
Drawing.....	..	2	2	2	2	2	2	..	2	2	16
Writing (stenog- raphy).....	2	2	2	..	..	..	..	2	..	..	8
Gymnastics.....	2	2	2	2	2	2	2	2	2	2	20
Total *.....	25	26	27	29	30	28	31	27	30	30	283

Weekly Hours devoted to Each Study in the Prussian Real-Progymnasia.

	VI	V	IV	III	II	I	Total.
Religion.....	3	2	2	2	2	2	13
German	6	5	3	3	3	3	23
Latin .....	..	..	7	4	4	3	18
French.....	6	6	5	5	5	4	31
English.....	..	..	..	3	3	3	9
History.....	..	..	2	2	2	2	8
Geography.....	2	2	2	2	2	1	11
Mathematics.....	4	4	4	5	5	5	27
Natural history and Physics.....	2	2	2	2	2	5	15
Writing.....	2	2	..	..	..	..	4
Drawing.....	..	2	2	2	2	2	10
Singing.....	2		2				4
Total *.....	27	27	31	32	32	32	173

* Except singing and gymnastics.

Weekly Hours devoted to Each Study in the Mixed School, Baden-Baden.

	COMMON TO ALL.				HIGHER REAL SCHOOL.						REAL-GYMNASIUM.					
	REAL-SCHOOL.				U. II		L. I	U. I	Total.	REAL-PROGYMNASIUM.		U. II	L. I	U. I	Total.	
	REAL-SCHOOL.				U. II		L. I	U. I	Total.	REAL-PROGYMNASIUM.		U. II	L. I	U. I	Total.	
	VI	V	IV		L. III	U. III	L. II			L. III	U. III	L. II				
Religion.....	2	2	2		2	2	2	2	18	2	2	2	2	2	2	18
German.....	6	5	4		4	4	4	4	39	3	3	3	3	3	3	39
Latin.....	..	..	..		..	..	..	..	..	8	8	6	6	6	6	40
French.....	..	6	3		5	4	4	4	45	4	4	4	4	4	4	38
English.....	..	..	3		4	4	4	4	27	3	3	3	3	3	3	21
History.....	..	2	2		2	3	3	3	17	2	2	2	2	2	2	17
Geography.....	2	2	2		2	..	..	..	10	2	2	..	..	..	..	10
Natural history.....	2	2	2		2	..	..	..	10	2	2	..	..	..	..	10
Chemistry.....	..	..	..		..	2	2	2	8	..	..	2	2	2	2	8
Physics.....	..	..	..		2	2	2	2	13	..	..	2	2	2	2	11
Mathematics.....	5	5	5		5	7	7	7	53	4	4	7	7	7	7	50
Drawing.....	..	2	2		2	2	2	2	16	2	2	2	2	2	2	16
Writing.....	..	2	2		..	..	..	..	4	..	..	..	..	..	..	4
Gymnastics.....	2	2	2		2	..	2	2	18	2	2	..	..	..	..	18
Singing.....	2	2	2		..	..	..	2	12	..	..	..	..	..	..	6
	25	26	27		29	30	30	31	200	32	32	33	34	34	34	276

180 SECONDARY SCHOOL SYSTEM OF GERMANY.

Weekly Hours devoted to Each Study in the Prussian Progymnasia.

	VI	V	IV	III	II	I	Total.
Religion.....	3	3	3	3	3	3	13
German.....	4	3	3	3	3	3	17
Latin.....	6	6	7	7	7	7	44
Greek.....	..	..	..	6	6	6	18
French.....	..	..	4	3	3	3	13
History.....	..	..	3	2	2	2	8
Geography.....	2	2	2	1	1	1	9
Natural history.....	2	2	2	2	..	..	8
Physics, chem., min..	..	..	..	..	2	2	4
Mathematics.....	4	4	4	3	3	4	22
Writing.....	2	2	..	..	..	..	4
Drawing.....	..	2	2	2	2	2	12
Singing.....	2	2	2				4
Gymnastics.....	2	2	2	2	2	2	12
	25	25	28	31	31	32	172

Weekly Hours devoted to Each Study in the Baden Progymnasium.

	VI	V	IV	L. III	U. III	L. II	U. II	Total.	
				Hum. Real.	Hum. Real.	Hum. Real.		Hum.	Real.
Religion.....	2	2	2	2-2	2-2	2-2	2	14	14
German.....	3	3	3	2-2	2-2	2-2	..	14	14
Latin.....	9	9	8	6-6	6-6	6-6	6	58	56
Greek.....	..	..	..	6-0	6-0	6-0	6	24	0
French.....	..	..	4	3-4	3-4	3-4	3	16	19
History.....	..	..	..	2-2	2-2	3-3	3	10	10
Geography.....	2	2	2	1-1	1-1	..	..	8	8
Natural history.....	2	2	2	2-2	2-2	..	..	10	10
Physics, etc.....	..	..	..	..	..	2-2	2	4	4
Mathematics.....	4	4	3	3-4	3-4	4-7	4	25	30
Writing.....	2	2	..	..	..	..	..	4	4
Drawing.....	2	2	2	2-2	2-2	2-2	2	14	14
Singing.....	2	2	..	2-2	2-2	2-2	..	10	10
Gymnastics.....	2	2	2	2-2	2-2	2-2	2	14	14
English.....	..	..	..	0-3	0-3	2-3	..	2	9
Hebrew.....	..	..	..	....	....	2-0	..	2	..
	26	26	25	31-30	31-30	32-31	30	201	198

This is a programme showing a school that carries both the *humanistic* and the *realistic* courses. Pupils from this may enter Upper Secunda of the corresponding school with nine-year courses.

*Weekly Hours devoted to Each Study in the Frankfort
Gymnasium (since Easter, 1892).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.	Change.
Religion.....	3	2	2	2	2	2	2	2	2	19	± 0
German and history nar..	5	4	4	3	3	3	3	3	3	31	+ 10
Latin.....	..	..	..	10	10	8	8	8	8	52	- 25
Greek.....	..	..	..	..	..	8	8	8	8	32	- 8
French.....	6	6	6	2	2	2	2	2	2	20	+ 9
Hist. and geog.	2	2	5	3	3	2	2	2	2	24	- 4
Mathematics..	5	5	5	4	4	3	4	4	3	37	+ 3
Natural hist..	2	2	2	2	2	..	..	..	..	10	± 0
Physics.....	..	..	..	..	..	2	2	2	2	8	± 0
Writing.....	2	2	..	..	..	..	..	..	..	4	+ 0
Drawing.....	..	2	2	2	2	..	..	..	..	8	+ 2
	25	25	26	28	28	30	31	31	31	255	- 13

*Weekly Hours devoted to Each Study in the Frankfort
Real-Gymnasium (since Easter, 1892).*

	VI	V	IV	L. III	U. III	L. II	U. II	L. I	U. I	Total.	Change.
Religion.....	3	2	2	2	2	2	2	2	2	19	± 0
German and hist. nar....	5	4	4	3	3	3	3	3	3	31	+ 4
Latin.....	..	..	..	8	8	6	6	6	6	40	- 14
French.....	6	6	6	4	4	3	3	3	3	38	+ 4
English.....	..	..	..	..	..	6	4	4	4	18	- 2
Hist. and geog.	2	2	5	3	3	3	3	3	3	27	- 3
Mathematics..	5	5	5	4	4	4	3	3	3	42	- 2
Natural hist..	2	2	2	2	2	..	..	..	..	10	- 2
Physics.....	..	..	..	..	..	3	2	2	2	9	- 3
Chemistry.....	..	..	..	..	..	..	2	2	2	6	± 0
Writing.....	2	2	..	..	..	..	..	..	..	4	± 0
Drawing.....	..	2	2	2	2	2	2	2	2	16	- 2
	25	25	26	28	28	32	32	32	32	260	- 20

Gymnastics, three hours weekly throughout. Singing in VI and V, two hours weekly; an hour and a half weekly for rest of course for pupils who can sing. Drawing (elective), two hours weekly in II and I. English (elective), two hours weekly in three highest classes (gymnasium). Hebrew, the same as English.

2. OUTLINE OF COURSES OF STUDY.

The following outline of courses in the various branches of study is taken from the programme (*Lehrplan*) of the Leibnitz Gymnasium of Berlin, 1895-'96. It is typical of all gymnasia, since there is little variation from a common standard in the different schools of the country. The smaller gymnasia have essentially the same courses as the larger.*

A. RELIGION.

(a) *Vorschule*.

1st class, 3 hours weekly.† Bible history, Old and New Testaments. The Ten Commandments without Luther's comments. Short Bible proverbs. Lord's Prayer. Morning and evening prayer. Church hymns.

2d class, 3 hours. History of Old and New Testaments. Bible proverbs. Prayers and the three hymns, "Ach, bleib' mit deiner Gnade"; "Nun danket alle Gott"; "Lobt Gott, ihr Christen."

3d class, 3 hours. Biblical history from Old and New Testaments. Church creed with Luther's comments. Church hymns and proverbs.

(b) *Gymnasium*.

Sexta, 2 hours. Biblical study from Old and New Testaments. Sixty stories. Preceding each of the church festivals, the appropriate biblical history from the New Testament. Learn first part of creed with Luther's comments. Impressing (*Einprägung*) lessons of catechism and hymns.

* Bericht über das Schuljahr 1895-'96, Berlin, 1896.

† The number of hours means weekly in each case.

Quinta, 2 hours. History of the New Testament. Fifty stories. Explanation and learning of the second part of the creed with Luther's comments. Thirty-four proverbs as in *Sexta*, with six new ones.

Quarta, 2 hours. Succession and division of books of Old Testament in connection with reading of most important sections. History of Kingdom of God as given in the Old Testament. Review of catechism learned in VI and V. Explanation and "Einprägung" of the third division of the creed.

Lower Tertia, 2 hours. Names and divisions of the books of the New Testament. Read book of Matthew. Review previously learned catechism. Take fourth part of creed, additional proverbs. Review previous hymns, take four new ones. Explanation of three or four other new hymns, at the same time learning individual couplets. Explain three psalms.

Upper Tertia, 2 hours. Acts of the Apostles. Most important parts of church and Reformation history in connection with the life of Luther. Review previous catechism. Memorize fifth part of creed. Proverbs. Explanation of psalms (three memorized). Review previous hymns with explanation of three or four additional. Learning of individual couplets.

Lower Secunda, 2 hours. Instruction in church doctrines and significance of orders of worship. Life and teachings of Jesus. Biblical teachings of New Testament. Review catechism. Proverbs, hymns, psalms.

Upper Secunda, 2 hours. History of Israel. Fur-

ther study of Old and New Testaments. Read Acts of the Apostles. Selected parts of non-Paulinian letters. Review church hymns, psalms, proverbs, and catechism.

Lower Prima, 2 hours. Study writings of John, with selected readings from his gospel. Life and writings of the Apostle Paul, especially Romans, Corinthians, Galatians, and Philippians.

Upper Prima, 2 hours. Life and works of John, with comprehensive lectures upon his evangelism. Reformation and church history. Most important teachings of the Evangelical Church. Augsburg confession. Review catechism. Proverbs, psalms, and church hymns.

No detailed comments upon the course of instruction in religion will be offered. Since biblical instruction forms no part of our public-school curricula, the discussion could not be made comparative, and a merely expository treatment is not necessary.

It may be well, however, to answer a question frequently asked me, viz.: Since there are different religious denominations, how is it possible to give instruction that avoids creating dissension and is acceptable to all? Dissension is avoided by providing teachers of religion for the various denominations represented in the schools. This is made possible by employing, in many cases, clergymen of the city to give instruction in religion. It does not usually necessitate the employment of many teachers for this branch in a given school. Seldom more than a Protestant and a Catholic—sometimes a Jewish—teacher are necessary for the same school.

Very frequently the pupils in a school are nearly all of the same denomination. It is also to be noted that attendance upon religious instruction is not obligatory if given by a teacher of a faith different from that of the pupil. My observations led me to believe that the greatest harmony prevailed, and that there was none of that strife between church and state that we in America would naturally expect as a result of the close correlation of secular and religious instruction. It is not to be inferred that a similar procedure could be followed in this country. Conditions are different, and the question has been settled in a way apparently best fitted to meet our own peculiar demands. No question of this nature can be settled upon purely *a priori* grounds. All institutions must ultimately be adjusted to the civilization amid which they exist.

B. CLASSICS.

(a) *Latin.*

Sexta, 8 hours. Grammar, with the greatest stress upon the regular verbs, excluding the deponent verbs. Word values from reading books. Some elementary syntactical rules inductively learned. Translation as home work. Memorizing individual sentences. Pure writing in Latin. Weekly half-hour thoughtful consideration of content of text.

Quinta, 8 hours. Review of regular grammatical forms. Deponent verbs. Irregular grammatical forms, with limitation to those necessary. Pronouns, comparison, numerals, prepositions, and adverbs. Some

syntactical rules as necessity demands. Oral and written exercises as well as Latin composition.

Quarta, 7 hours. Reading, first semester, three hours; second semester, four hours. Cornelius Nepos and selections by O. Richter. Exercises in construing unprepared selections. Translation back into Latin. Phrases and synonyms distinguished in the reading lesson. Grammar, first semester, four hours; second semester, three hours. Review of previous forms. Case forms. Syntax of verbs as necessity demands. Oral and written translations into Latin. Every three weeks, two short translations as written or oral class "extemporale." Each semester, three written translations from Latin into German.

Lower Tertia, 7 hours. Grammar, three hours. Review and extension of case forms. Rules of tense and mode. Oral and written translations from Warschauer's exercise book. Every two weeks, an "extemporale" or "Exerzitium" (written exercise) in connection with reading. Every six weeks, a written translation into German. Read in summer: Cæsar de bello Gallico, I, 1-128; VI, 11-29. Winter: Cæsar de bello Gallico, II, III, IV.

Upper Tertia, 7 hours. Explanations and exercises in dactylic hexameter. Reading and exercises as in L. III. Review and extension of mode and tense in connection with the syntax of verbs. Use of exercise book as in L. III. Read in summer semester: Cæsar, de bell. civ., II, 1-19; Ovid, Metam., II, 1-328; VII, 618-724. Winter semester: Cæsar, de bell. civ., III, with exceptions. Ovid, Metam.,

VI, 313-381; X, 1-77; XI, 1-66; IV, 55-166; V, 341-571; XIII, 750-899.

Lower Secunda, 7 hours. Memorize poetry. As opportunity affords, rhetorical rules and distinction of synonyms in connection with reading. Grammar, 3 hours. Review and extension of previous work. Every three weeks, two short translations into Latin in connection with reading, either "extemporale" or "Exerzitium." Every six weeks, instead of class work, a written translation into German. Read in summer semester: Cicero, de imp. Cn. Pompeii; Verg., *Æn.*, I, 1-389; Liv., lib. XXI, c. 1-31; Cicero in Catil., I, III; Verg., *Æn.*, II, 250-558. Winter: Liv., XXI, c. 1-48; Verg., *Æn.*, I, 1-392; II, 1-250; III, 1-191.

Upper Secunda, 6 hours. Memorize portions of Vergil or Cæsar. Rhetorical and grammatical points in connection with reading. Every two weeks a written translation into Latin. "Content" lessons. Read Cicero's Pro Sext. Rosc. Am.; Vergil's *Æn.*, VII, VIII (with exceptions), III, 690-718, IV; Salust, de conj. Catil., c. 21-61.

Lower Prima, 6 hours. Read Cicero, Tuscul., I; selected letters from 1st and 2d books. Horace, history which relates to Mæcenas and other friends, also history relating to Roman states. Remainder of work as in U. I.

Upper Prima, 6 hours. Tacitus' Germ., and sections from Cæsar's Gallic War; Tacitus' Annals, I, II, which refers to Germany. Poems from Horace which have a close relation to later literature. Selected letters of Cicero. Livy, I. Philosophical

poems of Horace, which refer to moral upbuilding. Memorize portions of Horace. Explanation of important rhetorical rules. Synonyms. Translations into Latin bi-weekly. Translations into German. "Content" lessons. Exercises in grammatical and rhetorical rules.

(b) *Greek.*

Lower Tertia, 6 hours. Regular grammar of Attic dialect to the mute verbs, excepting the secondary tenses. Important parts of sound and accent in connection with inflections. Syntactical rules learned inductively in connection with reading. Oral and written translations into Greek every two weeks (seldom as home work, usually in class). Reading according to Bellerman's reading book.

Upper Tertia, 6 hours. The secondary tenses, liquid verbs, the verbs in "*m*," and the important irregular verbs of the Attic dialect. Prepositions memorized. Review and extension of lessons in U. III. Important rules selected in connection with reading. Written translations every 14 days. Reading Xenophon's *Anabasis*, I, 1-3, II, 3-5, IV.

Lower Secunda, 6 hours. Syntax of nouns, articles, and pronouns. The important facts relating to mode. Every two weeks a written class exercise. Occasionally a home translation from Greek into German. Read, Summer: Xen., *Anab.*, IV, V, 1; Homer's *Od.*, III. Winter: Xen., *Hell.*, III, IV, with exceptions. Homer's *Od.*, I, II, with exceptions. Portions of Homer memorized.

Upper Secunda, 6 hours. Written translations from Greek into German, in connection with prose

readings, mode, tense, verbs, infinitives, participles. Read selections of Xen. Apomm.; Herod., VII, 1st half, IX; Homer's Od., XIV-XVIII; Plato's Apology. Parts of Homer memorized.

Lower Prima, 6 hours. Read Plato's Lach. Euth.; Demosthenes, Phil., I; Homer's Il., XIX-XXI; Sophocles, Ajax; Thucy., VI., with exceptions. Homer's Il., I-V. Remainder as in U. I.

Upper Prima, 6 hours. Memorize poetry. Review grammar. Translations from Greek into German from book or from dictation. Read Plato's Protag.; Homer's Il., II, IV, VI-IX, XVII-XXIV; Soph., Ajax; Dem., Phil., III.

(c) *Hebrew (optional).*

Upper Secunda, 2 hours. Elements of Hebrew grammar. Regular verbs with suffixes, nouns, vocabulary. Exercises in translation.

Lower Prima, 2 hours. Combined with U. I.

Upper Prima, 2 hours. Irregular verbs, nouns, numerals. Syntax. Vocabulary. Read Genesis and Psalms.

The classics, as is well known, form the backbone of the gymnasial course. They have held this distinction for hundreds of years and are likely to for some time to come. For many lines of subsequent study they are tenaciously held to be indispensable. This prejudice, if it be such, will not be overthrown easily. Only the lapse of time under modern conditions can determine their right to remain or to be superseded.

Of the details of method I shall not attempt a

discussion. I shall attempt to point out what seem to me, from personal observation, the salient features of classical instruction in German schools, and to mention something concerning the changing attitude toward the classics in Germany.

The general aim to be reached is an understanding of the most significant classical authors, and discipline in the logic of language (*"Verständniss der bedeutenderen klassischen Schriftsteller der Römer und der Griechen und sprachlich-logische Schulung,"* Lehrplan, 1891). However, it is stated that the rules of grammar are to be only a means to an end—that of reading and understanding the authors of antiquity. By systematic instruction this power of logical reasoning is to be strengthened and developed, and a mastery of the language gained. But the higher and more important motives are not to be lost sight of. The main object is to create in the learners' minds higher and nobler ideals of life, and to give them, through acquaintance with the ancient literature and history, a more substantial and extensive historic background. This only can give soundness of judgment concerning things of the present. History, literature, geography, and language (ancient and modern) are correlated into a solid phalanx. Whatever be the future walk in life, the pupil can not fail to have been bettered and strengthened by this ideal course. The future philosopher and the scientist require this background for a proper understanding of the development of their departments; for the future philologist, it goes without saying that it is indispensable; the historian should be in posses-

sion of the main truths, gained either in translation or at first hand, and the future politician or man of affairs can not fail to gain in critical judgment by an intimate acquaintance with the ancients.

It is in imparting this deeper and more important insight that I believe the Germans excel us. We teach the language for its own sake, and, we claim, to cultivate logical thinking—both purely formal objects. But the important ends, the formation of sound historical judgment and the inculcation of higher ideals, those things that really educate, we too often overlook.

As I shall attempt to show concerning history, likewise in the classics, those factors which tend to produce fealty to government, stability of purpose, and conservatism of ideas are all fostered. This view is too important to be overlooked. The dominant questions should be: What does this contribute toward future manhood or womanhood, toward individuality, toward citizenship? I would not have the latter confined to political boundaries, but citizenship in the broadest, most far-reaching significance.

As one of the means toward this end, I believe that their use of objective (“*Anschauungs*”) material in teaching the classics needs special mention. As in modern languages, the attempt is made to place the pupil in the midst of the people and places which he is studying. When studying Rome, he is to see the Romans as they were. Roman soldiers and citizens had distinctive appearances in dress; the pupils must not think of them in German soldiers’ and citizens’ dress. Full life-size pictures of

a Roman soldier, with helmet, shield, greaves, and battle-axe, or of citizens with the toga, form a part of the objective material for the lesson on one day. On another day the Roman Forum or the Athenian Parthenon are shown in drawings on a large scale. When possible, many of the implements of war or those used in the industries are brought in from the museums for inspection.

Greek and Roman statuary is also to be seen on every hand, not usually in the schoolroom indeed, but accessible, and ancient forms of architecture may be pointed out by the teacher during any lesson. In this way the subject becomes full of interest and reality. It assumes an ineffaceable meaning not to be lightly esteemed. I have often observed its correlation with mathematics, as well as with history—for example, in connection with the Pythagorean theorem, the conchoid of Nicomedes, or the octagonal form of the Roman Forum.

We have seen from the study of the development of the present curricula that the amount of time spent upon the classics is a constantly diminishing quantity. The question naturally arises: What will be the final outcome? Is the study of the classics to retain its present preponderance, or is it to be made co-ordinate with, or even subordinate to, subjects of more modern interest? Not even Germans who are the best acquainted with the situation would venture unqualified assertions. Hence it would be presumptuous in a foreigner to make too sweeping statements. However, if we may judge of the future, using the past changes as indices, certain conclusions can not

be escaped. The types of schools have been gradually but definitely changing from the purely classical schools for all alike, to those which are seemingly better adjusted to the diverse needs of the many. The classical schools have not been eliminated, but other schools, semi-classical and non-classical in character, have been established for those who needed little Latin and no Greek, and those who wished neither. More modern studies have been substituted for those persons who need special preparation in non-classical directions. Even the classical gymnasia have necessarily modified their curricula to suit the ever-changing conditions of civilization. This shows us the simple principle, which, however, too many entirely overlook—namely, that no curriculum of subjects can ever be arranged that will meet the needs of all times or of all countries, or even the needs of all people in the same country at the same time. The more complex and highly organized civilization becomes, the more differentiated must the curriculum be to meet the demands. An institution is an evolutionary growth; a curriculum is a result of evolution, just as much as an individual, or just as much as a people for whom schools and curricula are formed. It is simply the adjustment of relations; the passage “from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity.”*

It is this principle that ought to be constantly borne in mind when studying proposed changes in

* Spencer, *First Principles*, 1st ed., p. 396.

our own school curricula. It is not a valid argument for the introduction or exclusion of certain features to say that Germany does so, or that England does otherwise. The study of other countries certainly should aid in pronouncing more valid judgments, but the question must be worked out from the local (largely national) features of the case.

The strenuous effort in Germany to secure an "Einheitsschule" having a common basis of instruction without Latin in the lower grades has a great significance. Although the question was answered in the negative in the Conference of 1890, and it received no attention in the Lehrplan of 1891, it is still before the people and receiving much discussion. Permission was even received from the government by the local authorities of Frankfort to institute a temporary innovation in this direction. The gymnasium and the real-gymnasium of the city were entirely reorganized. The main features of the curriculum (see p. 181) are as follows: Latin is not begun in the lowest class but is deferred until the fourth (L. III) in both forms of school. Greek is deferred in the gymnasium until the sixth year (L. II) instead of having it begin as usual in IV. In place of Latin in the lower classes French is taken from the beginning and carried through the course. A greater number of hours (six) is given to it in the lower grades and a smaller number of hours in the latter part of the course. The total is essentially unchanged. In the real-gymnasium English is taken through the last four years only, instead of through

six, but the total is the same, a greater number of weekly hours being given than formerly. Latin and Greek, when begun, also have an exceedingly large amount of time given them weekly. Latin has ten hours weekly for two years, and eight hours for the remaining four years. Greek occupies eight hours weekly through four years. The advantages claimed for this system are these: No two foreign languages are being studied in their elementary stages simultaneously. One is pretty well conquered before another is begun. Again, more intensive work is put upon each when once begun. Lastly, probably of prime importance, an easy living language is substituted for a difficult obsolete one, during the period when the child mind is least able to cope with difficult grammatical abstractions. During this period his mind is most plastic and hence pre-eminently fitted to acquire language by the natural method. The easy is placed in the more tender years and the difficult in the period when the mind can better grapple with difficulties, instead of the reverse arrangement. This plan is now in operation in the Leibnitz Gymnasium, Hanover, in Altona, Magdeburg, and Iserlohn, and it is contemplated in Lübeck, Lichtenburger, and many other places.*

So far as can be seen, the plan meets with great satisfaction. The first class of graduates will leave the Frankfort school soon, and it will not be long before the system will have had a thorough trial. According to Professor Paulsen's views, there is no

* Program II, Realschule, Frankfort, 1896-'97.

reason why Latin may not be put off until much later than Sexta. He writes that "Latin grammar is undoubtedly too severe for nine-year-old boys, and not the best mental food at that age. Some can digest it, others suffer from it. The stream of red ink that daily is poured over the 'extemporale' exercises of the boys in Sexta, Quinta, and Quarta cries out toward Heaven." *

Professor Paulsen believes that the elements of a modern language taught orally would be much easier learned than the classics, and if it had been usual to begin Latin in Tertia no one would for a moment think of beginning it in Sexta. In the Middle Ages it was customary to make the very first instruction Latin; now the first instruction is in the mother tongue, but the custom of making Latin the first foreign language still prevails. He further says: "I believe the growing distance from the Middle Ages and the increasing significance of the modern languages will cause us to break even with this custom, as has already been the case with neighbouring nations." †

There will be, he adds, ‡ a gradual changing of the classical gymnasia into real-gymnasia. A large number of classical schools will be necessary for some time to come. "For always? I believe not." Professor Paulsen cites his own early training § to prove that the classics may be begun at a much later period than Sexta. He was a farmer boy and at-

* Geschichte des gelehrten Unterrichts, II, p. 617.

† Loc. cit., p. 618. ‡ Loc. cit., p. 618. § Loc. cit., p. 619.

tended the village school until about seventeen years old. He then entered the Altona Gymnasium in Secunda, finishing the entire course in three years more. He had begun Latin at fifteen and a quarter years of age by private instruction, at the same time continuing in the village Volksschule. At sixteen he began, also, Greek, Hebrew, French, English, and Danish. This shows that it is not necessary to begin Latin at nine years and Greek at eleven.

C. MODERN LANGUAGES.

(a) *French.*

Quarta, 4 hours. Elementary reading book, lessons 1-32. Reading exercises and attempts at speaking. Regular conjugation in the indicative mode of *avoir* and *être*. Articles in the nominative and accusative. Gender and declension of nouns. Regular and irregular comparison of adjectives. Numerals, adverbs, and conjunctive pronouns. Dictation exercises, "extemporale," and written work alternating every two weeks.

Lower Tertia, 3 hours. Plötz's elementary reading book, lessons 32-51. Grammar, lessons 2-25. Review of regular conjugations of *avoir* and *être*. Conjunctions, verbs with *cer*, *ger*, etc. Necessary irregular verbs and pronouns. Dictation exercises, "extemporale," and written work alternating every three weeks. Conversation exercises. Read from elementary reading book. Selected poetry.

Upper Tertia, 3 hours. School grammar, lessons 26-33. Irregular verbs, omitting the less important

composite verbs. Use of auxiliaries *avoir* and *être*. Order of words. Tenses in the indicative and subjunctive modes. Written and oral translations into French. Dictation lessons, "content" lessons, and conversation. Read Erckmann-Chatrian's *Histoire d'un Conscrit de 1813*, or *Choix de nouvelles modernes*, and *Au coin du feu*.

Lower Secunda, 2 hours. School grammar, lessons 54-72. Conjunctions, adjectives, adverbs, articles, prepositions, participles, infinitives. Review pronouns. Written and oral translations into French and conversation exercises. Read selected narratives. Sandeau's *Mlle. de la Seiglière*.

Upper Secunda, 2 hours. Review grammar in connection with oral translations into French. Every four weeks a translation from French into German. Conversation. Read Daudet's *Le Petit Chose*, Racine's *Phèdre*, Mérimée's *Colomba*. Selections from French poets. La Fontaine, Béranger, Fr. Coppée.

Lower Prima, 2 hours. Read Pailleron's *Le Monde où l'on s'ennuie*, Molière's *Le Malade Imaginaire*, D'Hérisson's *Journal d'un officier d'ordonnance*. Poems selected from La Fontaine, Victor Hugo, Fr. Coppée.

Upper Prima, 2 hours. Review grammatical rules in combination with oral translation into French. Every four weeks a translation from French. Conversation. Read D'Hérisson's *Journal d'un officier d'ordonnance*, Molière's *l'Avare*.

(b) *English (elective).*

Upper Secunda, 2 hours. Grammar is given in Bando, *Lehrbuch der Englischen Sprache*. Read first part of this book and Burnett's *Little Lord Fauntleroy*.

Lower and Upper Prima, 2 hours. (Work arranged together, but it is taken two hours each year.) Read Dickens's *Sketches*, Burnett's *Little Lord Fauntleroy*, Shakespeare's *Julius Cæsar*, Byron's *Prisoner of Chillon*, Masefield's *Mazeppa*.

It will be seen from the above course in English that it is only a side issue in the gymnasia. It is elective, and consequently is often omitted because of the press of other work. Future theological students always take Hebrew instead. The following outline of work from the Leipzig real-gymnasium will indicate the scope and character of the work done in the best real-gymnasias and higher real-schools.

ENGLISH IN LEIPZIG REAL-GYMNASIUM.

Lower Tertia, 3 hours. General introductory work. Weekly a written or oral "extemporale" in connection with the reading lessons. Talks about spring or a farmyard.

Upper Tertia, 3 hours. Reading Book, Part II (Zimmerman). Selections from Herrig's Reading Book and Burnett's *Little Lord Fauntleroy*. Conversation exercises. A weekly written exercise, prepared or "extemporale."

Lower Secunda, 3 hours. Zimmerman's Reading Book, systematic course, lessons 30-54. Selections from Herrig's Reading Book. Tales from the Alhambra, Irving. A weekly written exercise.

Upper Secunda, 3 hours. Schmidt's Grammar of the English Language, Part I; Syntax, 69-144. Review of etymology. Read Herrig's Classical Authors, Irving's English Sketches. A weekly written exercise (prepared or "extemporale").

Lower Prima, 3 hours. General review of the work done in L. II. Continuation of Schmidt's Grammar of the English Language, Part II; Syntax, 145-215. Every two weeks a written exercise, "exercitium, extemporale," or an elective exercise. Read from Herrig's Classical Authors, and from Macaulay's Lord Clive.

Upper Prima, 3 hours. Schmidt's Grammar of the English Language, Part II; Syntax, 215-254. Review the work of L. I. Oral exercises as in Schmidt. Every two weeks a written exercise (translation, "extemporale," or elective work). Read selections from Herrig's Classical Authors, parts of Milton's Paradise Lost, Shakespeare's Coriolanus, cursory reading of History of English Literature.

Modern languages, especially French, have considerable time devoted to them. In the humanistic gymnasia, where so much time is given to Latin and Greek, a less amount of time is given to the modern languages than in the realistic schools of various forms. But even in the classical schools French is studied to an extent that would seem considerable in American schools. The average amount of time

allowed for it in the various States is a little above twenty weekly hours, or with us that would mean a daily lesson, five hours a week, for four school years. When we consider that freshmen and sophomores in college acquire a good reading knowledge of French in two years, or even quite a fair knowledge in one year, it means, even considering the younger age at which the first part of the work is done in German schools, that quite a degree of proficiency ought to be attained in the long period devoted to it in German schools. And such is the case. Before the end of the course the boys read and speak French with quite an enviable fluency. Prussia has nineteen hours of French in its course of study, Saxony and Würtemberg eighteen hours each, Mecklenburg-Schwerin, Mecklenburg-Strelitz, and Alsace-Lorraine twenty-four hours each, Hesse twenty-three, Baden twenty, while Bavaria brings up the rear with only ten hours.

The real-gymnasia, which have no Greek in their courses, and have nine years of work, the same as the gymnasia, increase the number of hours quite materially. The average number of hours in all the eight principal states, Bavaria excepted, is about thirty. In Bavaria only twenty hours are offered.*

The real-schools (with courses of only six years) have varying numbers of hours set apart for French. Mecklenburg leads the list with a total of thirty-five hours, while Bavaria has only twenty-seven. Prussia

* This deviation in Bavaria is unexplainable, since the other studies have no extra hours to compensate. Bavaria, it will be seen from the table, has a lighter course throughout.

has thirty-one hours, that being about the average for all Germany. Higher real-schools have a still larger amount of time for French. Prussia gives, in addition to the thirty-one hours in the real-school proper, four hours a week in each of the upper classes beyond the real-schools. This makes a total of forty-seven weekly hours!

The subject is begun in the humanistic gymnasia usually with Quarta (at the latest, Lower Tertia), and continued throughout the course with an average of nearly three hours weekly. This class of school, having so much Latin and Greek, aims to have only one foreign language begun at a time, and starts with Latin in Sexta, deferring Greek until a year later than French. English is begun somewhat later in the course, but during the last three or four years of a boy's life in the gymnasium he is completely saturated with linguistic training. He is almost sure of three, and usually has four, foreign languages to battle with at the same time. If the pupil does not elect English, which is optional, he may elect Hebrew, and in some states Spanish, Italian, etc., are offered. These in addition to his own mother tongue. There are always fourteen or fifteen hours per week of required language work, and when English or Hebrew is elected the amount is swelled to sixteen or seventeen hours. Saxony requires seventeen hours, and offers two hours elective work. Thus the German gymnasia require about as many hours of language training in their courses as we have for all studies combined. Besides the foreign languages, they require from two to four hours weekly study of

the mother tongue. Then come mathematics, with an average of about one lesson a day throughout the entire period of school life, some science, a continuous draft of time for religion, obligatory gymnastics; and then considerable time and energy is to be devoted to drawing, writing, singing, etc. Should American boys be obliged to undertake so heavy a burden of studies, I fancy there would soon be a cry of inhuman treatment arising from tens of thousands of fond parents. Even in Germany the cry of "Überbürdung" has been heard from all quarters, and the "Überbürdungsfrage," together with the clamour for more practical arts and sciences and less of the apparently useless furniture of Latin and Greek,* makes one of the most burning questions of practical pedagogics in Germany.

Languages in their totality receive less attention in the real-gymnasia, but in these schools modern languages are accorded a relatively much greater place than in the humanistic institutions. Foreign languages occupy from ninety-two weekly hours of the entire course in Prussia to one hundred and two and a half weekly hours in Würtemberg in the real-gymnasia. The gymnasia in the same states give one hundred and seventeen and one hundred and thirty-nine hours respectively to foreign linguistic training.

French is usually begun in the real-gymnasia in Quarta or Lower Tertia, and pursued for three or four hours weekly to the end of the course. This

* That is, when obligatory in such quantities for students of all professions.* Few dispute their relative value.

gives to the real-gymnasia from six to seven hours more of French than the gymnasia.

In the real-schools, which have no foreign languages besides English and French, the latter is begun in Sexta, or at the beginning of the course, and taken throughout the six years of the course for a little over six hours weekly; the total amount of time given to French and English being about the same as that given in the real-gymnasia. The various progymnasia and real-progymnasia require about the same amount as the real-gymnasia.

The higher real-schools, however, offer the same amount as the real-schools through the first six years, and then add about four hours weekly (see Prussian higher real-school) for the last three years of the course. This provides a total of forty-seven hours' (Prussia) French instruction in the entire course. It was not my good fortune to visit a higher real-school, as they are not yet very numerous,* but with this amount of time spent upon French the pupils ought to acquire a very ready acquaintance with the printed language, and ought to speak and write it fluently. They probably do, for the instruction is excellent in most schools, and the pupils seem to acquire the language readily.

Many of the schools are drawing away from the older methods of teaching modern languages. Some still cling to the same method of presentation as is pursued with the classics, but they are the exception

* They, however, seem to be in great demand, having increased more rapidly during the last few years than any other form of school. See table on distribution of schools.

rather than the rule. It may be said that the gymnasium teachers favour the grammatical method, while the real-school teachers advocate the natural method. The results obtained in English in the gymnasia are not usually so good as those reached in the real-school and real-gymnasia. Still, some of the best teaching of English that I was able to witness in all my visits was in the gymnasia. French is taught as a spoken language, and taught well in all classes of schools. The real-schools usually give instruction of the most vigorous sort, which, viewed from the standpoint of practical utility, is most effective. This utilitarian tendency which the newer methods are believed to engender and foster is viewed with great disfavour by many gymnasial instructors. They believe that the philological method is the only one that can afford mental discipline, which they claim is the main and almost the sole object of teaching any subject.

The real-school men, on the other hand, maintain that no mental discipline is sacrificed by the natural method. They believe that there is even a gain, since the interest aroused in the study is so greatly increased. The practical end, which they do not deny, but believe is the chief purpose of teaching the modern foreign languages, is also reached. The real-school courses in their entirety owe their existence to the clamour for studies of practical utility, and may not the continuance of the basal studies in their courses be justified by the necessity for training that will enable the classes who are its patrons to best meet the bread-and-butter problems of life? Who shall say that the practical training received in these

schools does not enable their students to live more completely? And it must be conceded that complete living is the end of all true education. It must also be remembered that what constitutes complete living for one does not constitute complete living for all. Some live most completely when understanding and mastering the practical—even material—conditions of life only; others live completely only when in the contemplation of things spiritual. To cultivate pure spirituality only, and not to furnish the means for securing those things which enable people to have leisure and the surroundings necessary for the enjoyment of intellectual occupation, is apt to create an inharmonious condition. Individuals so trained are apt to be out of unison with their environment. The Germans regard these as a class of hunger candidates, unable to secure the means for their ideal existence, and unwilling and unable to turn to more menial service.

The teaching of modern languages, according to the natural or Pestalozzian method, is receiving thorough critical discussion in all parts of the country. All the pedagogical magazines are replete with able discussions *pro* and *con*, those in favour of the natural method being decidedly in the majority. There are also several journals exclusively devoted to a consideration of this important question. Not only are the newer methods finding favour in discussions, but many disciples are putting into practice the new doctrines, or, more strictly, the more recently revised doctrines. The natural method has had many exponents among the great leaders of peda-

gological thought. It was heralded by Erasmus, Comenius, Pestalozzi, Herbart, Willmann, Ackermann, Kern, and others, not to mention its English supporters.

By this method the ear as well as the eye is made a factor in the acquisition. The new language is to be acquired by the same method that a child learns its mother tongue—by reception through the ear, watching the movements of the lips, and by imitation of what it perceives. Through constant association of things with words the objective and the subjective are related. Frequent repetition is an important factor, and the influence of muscular memory brought about by movement of the vocal organs is taken advantage of.*

By the proper selection of material the interest is stimulated. This, it may be said, is perhaps only second to repetition in the influence upon memorizing. Of course, the youth who has learned to read possesses an advantage over the infant, and hence with him not all acquisition depends upon “parrot repetition”; logical associations aid the youth. The eye is also a factor in acquisition. But the initial work until the elements of pronunciation are well mastered belong to the oral side of language teaching.

It is usual to begin the teaching of both English and French in German schools by considerable introductory oral work. After some skill has been acquired in understanding the spoken word and in pronuncia-

* See J. R. Street, *Ped. Sem. IV, A Study in Language Teaching*; also Dr. H. T. Lukens, *Ped. Sem. III, A Study in learning Language*.

tion (this includes sentences as well as words), reading is begun. The lessons are first read by the teacher, who explains the words and phrases not understood by the pupils; the pupils then read the selection; and after this follows a large amount of judicious questioning upon what has been read. At first the questions are so framed that the pupil may answer in the words given in the book, or by changing a single word or at most a very few words of the teacher's question; for example:

Sind sie lang in London geblieben? Ja, ich bin lang in London geblieben. Who went with you to Rugby? Henry went with me to Rugby. Did you see the Queen's palace in London? Yes, we saw the Queen's palace in London.

Concert answering in the first stages of the work is recommended as an aid in cultivating the ear and the voice. "Ausbildung der Hör- und Sprechfähigkeit des Schülers ist stets im Auge zu behalten" (Prussian Lehrplan). Much stress is placed upon the teaching of words and phrases used in daily life by the people whose language is being studied. Professor Hausknecht claims that the current language of the people should be learned before the literary forms. It is manifestly a lack, he maintains, when (as is the case with certain elementary books on English) pupils are not given in the course of an entire year the expression for letter, post, railway train, steamer, tailor, coffee, or supper; further, the characteristic English expressions, roast beef, beefsteak, plum pudding, ham, eggs, ale, ginger-beer, tramway, waterproof, trade, industry, commerce,

yes, also, daughter, mother, aunt, girl, and even pretty. And the pupil has been obliged to memorize the words *fossil iguanodon*!

The more recent books and the official regulations state that pupils are to be made acquainted with the daily life and occurrences of the people whose language they are studying. When studying English, they are carried in thought, aided by maps, pictures, and proper reading books, we will say, to the capital of England, and made acquainted with its location, its streets, its points of interest, such as the Houses of Parliament, Westminster Abbey, Kensington Gardens, Hyde Park, Rotten Row, Trafalgar Square, the British Museum, the Bank of England, the Tower, Big Ben, etc. I have witnessed very interesting lessons based upon Tom's Journey through London and its Environs. (See Hausknecht's English Student.) The boys were introduced to all the famous sights, learned something about the Charterhouse School and Rugby, about the English schoolboy's games, and life in England generally. The schoolboy life is, of course, of greatest interest, being so nearly related to their own experiences. Had the language been French, Paris or some other French city would have formed the centre of the theme, and French schoolboy life would have received attention. I have witnessed very spirited exercises upon a study of French schools.

Many of the German modern-language teachers speak with a good deal of pride of the fact that their books on French contain very few classical tales and fables. The French reading books on German are

almost exclusively made up of classic material. Such selections tend to deaden all interest. Greek tales, if in any foreign language, should be studied in Greek, Latin tales in Latin, and fables in the mother tongue. Some of our American text-book writers could well profit by this suggestion when preparing foreign-language manuals. Interest is fundamental in the acquisition of any subject, and I believe, from the work I saw, that the Germans have struck one of the right keys toward securing it in language teaching.

Along with this the geography of the country is correlated, names are learned as they are pronounced at home, much valuable information is added, and with no loss—on the contrary, with gain—to the language lesson. Important events of history are discussed. The authors who have contributed most to the literature are considered biographically, and some of their most important productions are at least talked about if time does not permit a more detailed consideration. In the higher real-schools quite a thorough and detailed survey of English literature is attempted, but in the gymnasia, where it is taken for such a limited time, the elements only can be studied. Simultaneously with learning vocabularies (which in the early portion of the work are learned from the teacher) and becoming acquainted with the life of the people, rules of grammar are considered. But they are of minor importance, and are incidental instead of being the “Hauptsache.”

The above necessarily brief discussion will give something of the aims and methods in teaching modern languages. The theories advanced by their most

progressive teachers are founded on a sound pedagogical and psychological basis. Some schools secure most creditable results, others less perfect. From all the schools the boys come with a good working knowledge of French—i. e., they can read it, speak it, and write it with considerable ease and fluency. From many schools the same may be said of English, but it is far from universal. Few of the university students have a good working knowledge, and scarcely any can speak it. This is due to two causes: First, most of the university students are gymnasial trained, and there little attention is paid to it, some never studying it; second, few teachers can speak it correctly, hence the poor pronunciation of the students. While they teach French pronunciation perfectly, in general the English pronunciation is wretched. It is very exceptional to find native English teachers in the schools, and few of the German teachers ever master the difficulties of English pronunciation. Occasionally a teacher spends a short time in England, but it is the exception rather than the rule. Hence, although the real-gymnasia and higher real-school graduates can read and write the language well, they can seldom speak it so that an Englishman or an American can understand without difficulty. I have listened to a class of Upper Prima boys read from Herrig's Classical Authors and was unable to understand a line without also looking on the book. They had studied the language over five years. On the whole, I believe their methods and results in modern languages are very commendable, and should they secure English-speaking teachers, their proce-

ture in English in the real-gymnasia and higher real-schools would be as admirable as it now is in teaching French.

Appendix to Section C.

The following is a list of works compiled by the School Board in Coblenz,* from which teachers are to make selections in teaching English :

HISTORICAL:

Chambers, History of the English People.....	U. III.
Scott, Tales of a Grandfather.....	U. III, L. II.
Macaulay, Lord Clive.....	II.
Irving, The Discovery of America.....	II.
Macaulay, Warren Hastings.....	U. II, L. I.
" The Duke of Monmouth.....	U. II, L. I.
" History of England.....	I.
Green, A Short History of the English People.	I.
McCarthy, The Crimean War.....	U. II, I.

BIOGRAPHICAL:

Franklin's Autobiography.....	II.
Smiles, Deeds of Heroism.....	L. II.
" George Stephenson....	II.
Irving, Sketch-Book.....	U. II, I.
Goadby, The England of Shakespeare.....	I.

NARRATIVE:

Irving, Tales of the Alhambra.....	U. III, L. II.
Marryat, Masterman Ready.....	U. III, L. II.
" The Children of the New Forest.....	U. III, L. II.
" The Settlers in Canada.....	U. III, L. II.
" The Three Cutters.....	U. III, L. II.
" Collection of Tales and Sketches.....	II.
Scott, Waverly, Kenilworth, Ivanhoe.....	U. II.
Dickens, Sketches.....	U. II.
" A Christmas Carol.....	U. II, I.
" The Cricket on the Hearth.....	

* Centralblatt, 1897, pp. 225-227.

ORATIONS:

Parliamentary Speeches of Pitt, Burke, etc.

SCIENCE AND HISTORY OF CIVILIZATION:

Great Explorers and Inventors.....	U. II.
Besant, London, Past and Present.....	U. II, I.
Green, Short History of the English People...	U. II, I.
Escott, England and its People.....	U. II, I.
Polity and Pursuits.....	
London and its Environs.....	U. II, I.

POETRY:

Julius Cæsar, Coriolanus, Macbeth, Richard	
III, Merchant of Venice.....	I.
Scott's Lady of the Lake.....	U. II, I.
Byron's Selections from Childe Harold.....	I.
Milton, Selections from Paradise Lost.....	I.
Collection from Groff and Hausknecht.....	U. III, I.

Selections for French.

HISTORICAL:

Lamé-Fleury, Decouverte de l'Amerique.....	U. III.
Michaud, Première Croisade.....	U. III.
“ Troisième Croisade.....	U. III, L. II.
Barante, Histoire de Jeanne d'Arc....	U. III, L. II.
Thiers, Bonaparte en Egypte et en Syrie.....	L. II.
Drury, Siècle de Louis XIV.....	L. II.
Ségur, Histoire de Napoléon et de la Grande	
Armée.....	U. II.
Miquet, Histoire de la Révolution.....	U. II, I.
Lamprey, Histoire de Napoléon.....	I.
Taine, Les Origines de la France contempo-	
raïne.....	I.

BIOGRAPHICAL:

Miquet, Vie de Franklin.....	II.
Michaud, Vie et Coutumes des Croisades.....	II.
Halévy, L'Invasion.....	II.
Larcey, Le Siège de Paris.....	U. II, I.
D'Hérisson, Journal d'un Officier d'Ordon-	
nance.....	U. II.

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BIOGRAPHICAL :

Montesquieu, <i>Considérations sur les Causes, etc.</i>	U. II, I.
Taine, <i>Napoléon</i>	I.
Guizot, <i>Étude sur Washington</i>	I.
" <i>Histoire de la Civilisation</i>	I.

ORATIONS :

Desèze, <i>Défence de Ludwig XVI</i>	I.
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NARRATIVES :

Bruno, <i>Le Tour de la France en 5 Mois</i>	U. III.
" <i>Francinet</i>	U. III.
Souvestre, <i>Au Coin de Feu</i>	U. III, L. II.
Eckmann-Chatrian, <i>Histoire d'un Conscrit</i> ...	U. III, L. II.
" " <i>Waterloo, Contes Popu-</i>	
<i>laires, Contes du Bord du Rhin</i>	L. II.
<i>Conteurs Moderne</i>	L. II.
<i>Choix de Nouvelles Moderne</i>	II.
Daudet, <i>Lettres de Mon Moulin</i>	U. II.
" <i>Contes du Lundi</i>	U. II.
Coppée, <i>Nouvellan</i>	U. II.
Mérimeé, <i>Colomba</i>	U. II.
Toepler, <i>Nouvelles Genevoises</i>	U. II.

NATURAL SCIENCE, GEOGRAPHY, TECHNICAL :

<i>Voyageurs et Inventeurs célèbres</i>	L. II.
Figuiér, <i>Les Grandes Inventions modernes</i> ...	L. I.
M. du Camp, <i>Paris</i>	I.

DRAMA :

Girardin, <i>La Joie fait Peur</i>	L. II.
Scribe, Bertrand et Raton, <i>Le Verre d'Eau</i> ...	II.
" <i>Bataille des Dames</i>	U. II, I.
Sandeau, <i>Mlle. de la Seiglière</i>	U. II.
Feuillet, <i>Le Village</i>	U. II.
Augier et Sandeau, <i>Le Gendre de M. Poisier</i> ..	U. II, I.
Racine, <i>Athalie, Britannicus</i>	U. II.
Corneille, <i>Le Cid, Horace, Cinna</i>	U. II, I.
Molière, <i>Le Bourgeois Gentilhomme</i>	U. II.
" <i>L'Avare</i>	U. II, I.
" <i>Les Femme Savantes</i>	I.
" <i>Le Misanthrope</i>	U. II.

On the four following pages is given the table of contents of one of the modern German books* for teaching English. It illustrates very well the methods which I have seen tried in some of the best schools. It seems to me to contain much worthy of imitation in teaching foreign languages in our own schools; hence I give it without change.

D. MATHEMATICS.

1st class, Vorschule. Arithmetic, 5 hours. Exercises in the four fundamental operations with numbers to one hundred. Division with one-place divisors. Multiplication table. Exercises from the *Rechenfibel* (primer of arithmetic) with numbers from one to one hundred.

2d class, Vorschule. Arithmetic, 5 hours. *Kopfrechnen* (mental arithmetic) with numbers from one to one thousand. Written exercises. Fundamental operations with numbers to one million.

3d class, Vorschule. Arithmetic, 5 hours. Mental and written exercises with numbers of any size (*Unbegrenzten Zahlraum*) with concrete and abstract numbers. Coins, measures, and weights.

Sexta (Gymnasium). Arithmetic, 4 hours. Repetition of fundamental operations with whole numbers, concrete and abstract. Reduction of integral numbers (simple examples). German measures, weights, coins. Exercises in decimal notation and calculation.

* Oberstufe zum Lehrbuch der englischen Sprache vom Dr. Oskar Thiergen. of Dresden. Published by B. G. Teubner, Leipzig, 1897.

Inhaltsverzeichnis.

I.	II.	III.	IV.	V.
GRAMMAR, 1st Lesson.	READING EXERCISE.	TRANSLATION EXERCISE.	CONVERSATION.	SUBJECTS FOR COMPOSITION
To do im bejahenden Satze; To do als selbständiges Verb; verneinende Sätze ohne to do.	<i>A Walk through Hyde Park.</i>	In den Straßen Vondoms. Besuch der St. Paulskirche.	<i>The Town.</i>	My Native Town.
2d Lesson.	<i>The Battle of Hastings.</i>	Entwicklung der englischen Sprache.	<i>The House.</i>	The Battle in the Forest of Teutoburg. Develop- ment of the German lan- guage.
3d Lesson.	<i>The Hundred Years' War.</i>	Johanna Darc, die Frau von Orleans.	<i>The House.</i>	In what respect does Schil- ler's Drama, "The Maid of Orleans," differ from History.
4th Lesson.	<i>Queen Eliza- beth.</i>	Maria Stuart.	<i>Furniture.</i>	Germany at the time of Queen Elizabeth. The Empress Maria Theresa.

5th Lesson.	Zeitwörter, die im Englischen den Dativ oder Genitiv regieren, über die einflussung des Präfixats mit dem Subjekte, Veränderung des Präfixats bei doppeltem Subjekt.	<i>Sir Walter Scott.</i>	Robert Southey.	<i>Furniture, Dressing.</i>	The Life of Schiller (Goethe, Körner, etc.).
6th Lesson.	Affinitativ mit Infinitiv, Gerundium, Partizipium.	<i>The Battle of the Nile.</i>	Der Untergang der „Victoria“.	<i>The Human Body, Health, Diseases.</i>	The Loss of "The Grosser Kurfürst" (of the Elbe, Eider, etc.).
7th Lesson.	Gebrauch und Folge der Zeiten.	<i>An Evening at the Lyceum Theatre.</i>	Der Geyssfallpalast zu Sydenham.	<i>The Human Body, Health, Diseases.</i>	My First Visit to a Theatre, Comparison between the German and the English Theatres.
8th Lesson.	Conjunctiv.	<i>The Battle of Trafalgar.</i>	Das Leben Nelsons.	<i>Meals (Repasts).</i>	The Life of Bismarck (of Moltke, etc.).
9th Lesson.	Geschlechtswort, Befall des Geschlechtswortes im Gegensatz zum Deutschen.	<i>Down the Thames from Chelsea to Woolwich.</i>	Das Arsenal zu Woolwich.	<i>Meals (Repasts).</i>	An Excursion by Steamboat.

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I.	II.	III.	IV.	V.
GRAMMAR.	READING EXERCISE.	TRANSLATION EXERCISE.	CONVERSATION.	SUBJECTS FOR COMPOSITION.
10th Lesson.	<i>The English Navy.</i>	Das englische Heer.	<i>Weather, Festivals, Church.</i>	The German Army. Advan- tages of the Compu- tatory System.
11th Lesson.	<i>A Trip to the Isle of Wight.</i>	Edinburg und die benachbarten Gegende.	<i>Travelling. Amusements.</i>	Description of a Journey or a Voyage.
12th Lesson.	<i>The Conquest of Bengal.</i>	Der indische Aufstand.	<i>School and University.</i>	The German Colonies. The Franco-German War.
13th Lesson.	<i>Smuggling.</i>	Das Raub zu Wundtoden.	<i>Sciences, Let- ters, Arts.</i>	A Parade before His Majes- ty the Emperor William. A Camp (Bivouac).
14th Lesson.	<i>Henley-on- Thames Regatta.</i>	Das Derby- Reiten.	<i>Industry, Commerce.</i>	Advantages and Dangers of Rowing. The Olympian Games.

15th Lesson.	Das himmelste Gärwort.	<i>Christmas in England.</i>	Altenglische Weihnachtsgeschichten.	<i>Agriculture, Horticulture, Hunting.</i>	Christmas in Germany. Christmas on Board a Ship. Christmas in a Camp.
16th Lesson.	Das heilige Gärwort.	<i>Cricket.</i>	Englische Sitten.	<i>Society.</i>	Football. Lawn tennis. The Value of outdoor Games for Boys. The Secondary Schools in Germany. Comparison between the German and the English Secondary Schools.
17th Lesson.	Das Umflandewort.	<i>A Christmas Carol.</i>	Ein Weibsgeschicht (nach Dickens).	<i>Justice.</i>	The Christmas-Tree.
18th Lesson.	Das Verhältniswort.	<i>Home Rule.</i>	Die Regierung der Königin Victoria.	<i>War. Army.</i>	The Reign of the Emperor William I. of Germany (of King Albert of Saxony, of Otto the Great, of Charlemagne, etc.).
19th Lesson.	Das Verhältniswort.	<i>"Money" I. Act by Butler.</i>	"Mina von Barnhelm" I. Akt von Keffling.	<i>Army. Navy.</i>	

Quinta. Arithmetic, 4 hours. Divisibility of numbers. Common fractions. Simple equations, with numerical expressions on one side. Simple exercises in proportion. German weights, measures, and coins.

Quarta. Mathematics, 4 hours (arithmetic 2 hours). Decimals, simple and compound proportion, with integral numbers and fractions (exercises from "bürgerliche" life). Review of fractions and numerical computation of literal expressions. Planimetry 2 hours. Straight lines, angles, triangles. Fundamental constructions.

Lower Tertia. Mathematics, 3 hours. First semester, arithmetic 2 hours, planimetry one hour. Second semester, the reverse. In arithmetic the fundamental principles in calculation of absolute literal expressions. Equations of the first degree with one unknown quantity. Planimetry: Parallelograms, circles (first part), construction of triangles, and tangents.

Upper Tertia. Mathematics, 3 hours. First semester, arithmetic 2 hours, planimetry 1 hour. Second semester, reverse the number of hours. Arithmetic: Equations of the first degree with one and with several unknown quantities. Exercises in fractions. Powers and roots, considering only positive integral exponents. Planimetry: Circle (second part), equality of surfaces, calculation of rectilinear surfaces. Introduction to similarity of figures. Construction of triangles, having given the sum and difference of two sides and of the opposite angles.

Lower Secunda. Mathematics, 4 hours. First se-

mester arithmetic, second semester planimetry. Simple and quadratic equations with one unknown quantity. Application of these in triangulation. Definition of power and roots. Negative and fractional exponents. Logarithms and application with five-place logarithmic tables. Calculation of surfaces and circumferences of circles. Definition of trigonometric functions. Trigonometric calculation of right-angled and equiangular triangles. Calculation of sides, surfaces, and volumes of regular polyhedrons.

Upper Secunda, 4 hours. Trigonometric construction of triangles. Powers, roots, logarithms. Equations, including quadratics with several unknown quantities. Arithmetical and geometrical series of the first order. Similarity of figures, geometric means, and a little concerning harmonic points and rays. Continuation of algebraic geometry.

Lower Prima, 4 hours. Review arithmetical principles of former classes. Interest, rent, imaginaries, binomial theorem for positive integral exponents. Stereometry. Maxima and minima, cubic equations.

Upper Prima, 4 hours. Review arithmetic of previous years. Interest, rent, imaginary numbers, binomial theorem with positive integral exponents. Completion of trigonometry (addition theorems). Constructions and determinations. Application of trigonometrical principles to spherical triangles.

The mathematical curricula in all the German secondary schools offer many points of suggestive-

ness for American schools. The entire course occupies a little less time than is usually devoted to mathematics in American schools. Beginning with the first year in the *Vorschulen*, four hours a week is the average amount of time devoted to the subject. From *Sexta* to Upper *Prima* in the *gymnasia*, from thirty-three to thirty-six (usually thirty-three) weekly hours of instruction are given to mathematical subjects of various kinds. We may regard four hours weekly throughout the entire course as about the average amount of time.

In American schools about five hours a week are given through each of the eight grades of the grammar-school course, or about forty weekly hours of instruction plus from two to two and a half years of five hours a week in the high school, making a total of from fifty to fifty-two and a half weekly hours before leaving the high school. If we add at least one year of five hours weekly in college to carry the pupil to the same point of proficiency, the difference in the amount of time becomes very great. This shows a considerable excess in the amount of time occupied by the American boy to the end of the high-school course—in acquiring what? An amount of mathematical knowledge and skill equal to that possessed by the gymnasial graduate? As can be seen from an examination of the German school programmes, the American boy at the end of the high-school course has acquired less knowledge of mathematics than his German cousin at the end of the gymnasial course. To be sure, as was demonstrated in the chapter on Ages of Graduates, the German

boy is about two years older, but we must regard as of considerable moment the less amount of time he has spent in acquiring this knowledge, and the extra amount of time he has left for other branches.

The gymnasial graduate has about the same mathematical acquirements as the average college student at the end of his freshman year. Those who have taken the real-gymnasium or the higher real-school course have accomplished work nearly equivalent to that finished the end of the sophomore year in college.

The real-school courses of six years' duration cover as much ground in mathematics as our high schools; that is, pupils may have acquired in German schools as much mathematics at the end of the ninth year of school life (if they finish at a normal age) as our pupils at the end of the twelfth year of school. If we again compare the work in the German gymnasia (humanistic and real) with the entire mathematical course through the sophomore year, we find that the American boy has spent from fifteen to twenty weekly hours more than the gymnasial graduate. This means an equivalent of from three to four years of five hours weekly. Surely a difference worth investigating!

The causes of this discrepancy may be summed up, perhaps, under the following heads:

(a) The German schools have better instruction by more thoroughly trained teachers.

(b) There is a better co-ordination and division of work.

(c) The work is continued to the end of the gym-

nasial course, and only about four hours are given weekly, instead of five hours to the end of the second year of the high school, and then a cessation.

(*d*) In the German schools the metric system is used, instead of our awkward system of weights and measures.

(*e*) The Germans omit all unnecessary details, especially in arithmetic and demonstrative geometry. Only such propositions are dwelt upon as will be in constant use throughout the course.

(*f*) The Germans omit all unnecessary or unpractical parts of arithmetic. Only those parts are taken that are of actual use in business life or are necessary preliminaries for the subsequent mathematical work. The business arithmetic is confined to elementary principles. Such topics as banking, bank discount, partial payments, alligation, partnership, and others that are required in our elementary schools, do not appear in their programmes and receive little treatment in their text-books on arithmetic. In Quarta (the sixth year of school life) the work begins to diverge from the ordinary numerical arithmetic, and a more strictly mathematical treatment is begun by introducing literal arithmetic. Not all the hard problems have been solved, nor all possible arithmetical rules and combinations mastered; but the boy is led by gradual steps to a more purely mathematical consideration of number and quantity. He is also helped to acquire principles which will enable him to conquer some of the difficulties that he has previously encountered, but which he has escaped by going around. A maxim nowhere

more true than in mathematics is, that "often the best way to conquer a difficulty is by going around it." Single-handed the boy must frequently flounder around unnecessarily, probably overmastered by the formidable and useless arithmetical puzzles that appear in many American text-books on arithmetic.

(*g*) The manner of dividing the work is such that pupils may take up topics and subjects in the order of their difficulty. Not all of one subject, including all the side issues, are attempted before taking up a new subject. Simple equations are easier than partial payments and it would certainly appear psychological to begin them in their order of difficulty. It is an almost trite pedagogical maxim, that the presentation of a subject should always be adapted to the capabilities of the taught; and also that we should proceed from the simple to that which is more complex. One logical order that might be followed, and that one we have been following, consists in attempting to finish the entire subject before beginning a new one. This in the case of mathematics violates the psychological order, which is more important. It is also certainly as logical to arrange topics in their order of difficulty if one will directly aid in the interpretation of the other; and there can be no question but that some parts of algebra and geometry are necessary preliminaries of certain arithmetical operations. A knowledge of the equation is almost indispensable in many parts of arithmetic.

Much oral work is required in all grades and in all mathematical subjects. There are no black-

boards large enough to admit of having an entire class work at the board. I never saw a blackboard in Germany larger than four feet by eight feet. The teacher uses the board for demonstrational and illustrative purposes, and the pupils are obliged to follow the work mentally. Thus all crutches are taken away, and the results are certainly excellent. I have never witnessed mathematical exercises where pupils exhibited more mental alertness. In our American schools the too abundant use of the blackboard is unquestionably conducive to weakness in mathematical computations. When too much written work is permitted, the pupil fails through lack of training to grasp and to hold clearly and firmly in mind the proper mathematical relations. Students often enter the universities without any power whatever of following a lecture or a connected discourse, and this habit of leaning on visual helps in mathematics is one of the causes to which the defect may be attributed.

As a specimen of the facility with which examples may be worked mentally by young pupils, I append a number of examples that were given to boys in the fourth year of school.* The class were very ordinary boys in appearance, but as they, some sixty in number, sat in soldierly order upon those low, backless recitation benches for an entire hour (from 3 to 4 P. M.) and vanquished problem after problem which the teacher hurled at them, with scarcely an error, it excited my admiration for their masterly accom-

* From III Höhere Bürger Schule, Leipzig.

plishments. At the same time I pitied their poor backs and aching muscles, and I could not repress a smile as an occasional one, longing for physical motion, pricked his neighbour with a pin or punched him in the ribs; this, of course, when the teacher was not looking. The lesson was upon denominate numbers, and was evidently a review lesson. I omit preliminaries, and give only some of the examples:

How many mm. in 1 cm.? cm. in 1 m.? mm. in 1 m.? m. in 1 km.? How many sec. in 25 min.? 35 min.? 75 min.? 1 hour equals how many min.? 2 hrs.? 24 hrs.? 59 hrs.? How many hours in 1 day? 5 days? 9 days? 60 days? 85 days? 66 days? 90 days? 99 days? in month of February? months in 9 years? 80 years? 70 years? 700 years? Exact date of Luther's birth? death? How many years, months, days old was he? Same for Goethe. How many years old is your father? months? How many days in 2 years? 10×10 equals? 100×10 equals? $1,000 \times 10$ equals? so on up to 1,000,000,000. How many hours (approximately) in 1,000,000,000 seconds?

A great advance has been made in Germany within the last few years in the methods of teaching mathematics. Undoubtedly the methods there have not been very poor for a long time, for with so many competent teachers who have been able, because of their broad scholarship, to see the entire course in its proper relations the methods could not possibly be inferior. The chief advance, according to Dr. Rethwisch,* has been in the introduction of the

* Deutschlands höheres Schulwesen im 19. Jahrhundert.

heuristic method. The old Euclidian method has been almost entirely abandoned. Instead of following a written course of reasoning and then memorizing it, pupils are taught to discuss relations for themselves, and from known discovered conditions to draw conclusions. One of the best geometry lessons I ever witnessed was in a class of boys about twelve years old. The lesson was upon similarity of triangles. Five or six cases of similarity of triangles were disposed of during the hour—more than are usually taken by the old method of memorizing the author's reasoning. The pupils were led to discover all relations, to formulate the theorems, and from the known conditions given the conclusions were drawn and the course of reasoning carried out by the pupils themselves. The teacher guided the discussion, but the pupils formulated it. The method may perhaps be called the heuristic-analytic method.

To quote Rethwisch again, "In der Ausbildung der genetischen systeme beim analytischen Beweisführung und heuristischen Lehrverfahren gipfelt der Fortschritt des mathematischen Unterrichts."

The following paragraphs are inserted as a fair sample of the division of work as carried on in most of the secondary schools I have visited. It is compiled from the table of contents of a much-used work in mathematics designed for higher grades in secondary schools.*

Planimetry.—Under this are included angles,

* F. G. Mehler, *Hauptsätze der Elementar-Mathematik zum Gebrauch an Gymnasien und Realgymnasien*; seventeenth edition, 1892.

parallel lines, rectilinear figures, equality of rectangular figures, circles, similarity of figures, comparison and measurements of rectilinear surfaces and regular polygons, measurement of the circle, algebraic geometry.

Algebra.—Four fundamental operations, powers and roots, imaginaries, expressions of the form $\sqrt{a \pm \sqrt{b}}$ and $\sqrt{a \pm ib}$, proportion, equations, continued fractions, logarithms, interest and rent (by logarithms). Trigonometry: trigonometric functions, solution of plane triangles. Series and binomial theorem: geometric series, arithmetical series, application of these in the elementary notions of simple transcendental functions. Binomial theorem and applications.

Stereometry.—Straight lines and planes in space. solid angles, polyhedrons, cylinder, cone, sphere. Spherical trigonometry. Trigonometric tables.

Throughout the entire course the number of formulæ to be memorized is reduced to the minimum, but these few are constantly put into practice. The fundamental principles of planimetry are first met with in Quarta, and are constantly used throughout the remaining six years of the course. Trigonometric functions are first defined in Lower Secunda, a year before our pupils leave the high school, and the knowledge of these is made necessary almost daily for the next four years. The same is true of algebraic equations. Their solution is learned early in the course, and their application is constantly demanded throughout the whole realm of mathematics. Trigonometric formulæ are reduced to the minimum,

but by endless repetition they become indelibly fixed in the memory.

The method of procedure, it will be noticed, is diametrically opposite to the methods in our own schools. Examine the courses of study in a thousand American high schools (and these courses are followed quite strictly), and it will be found that arithmetic seldom appears, it supposedly having been finished in the grammar school; algebra is found to be a first- or second-year study, geometry follows after it (as an isolated study), and trigonometry, which will not be found in ten per cent of the courses, follows along after geometry. Is there any psychological reason why they should follow this order? I am firmly convinced that one of the weakest spots in American school administration is this unnatural, unpsychological, arbitrary division of subjects into isolated units.

Psychologists will agree that repetition and association are among the most, if not the most, potent factors in memory. The more ways in which a principle is applied the more association tracts it forms, and hence the more firmly fixed in memory. By the German plan of studies all principles learned are kept before the mind through long periods. In American schools the reverse is true. Studies are pursued for a short period and then dismissed entirely. It is no wonder that when pupils appear for examination for entrance to college they know so little about algebra and other secondary-school studies.

This "spiral" arrangement of subjects is worthy of special commendation. By this I mean that the

student is led to cross and recross the same ground many times, each time with a different purpose. At one time a topic may be studied with an entirely practical end in view—for example, that of acquiring a mechanical mastery of the operations involved in reaching results ; at another time it may be considered for the purpose of understanding the scientific principles involved. By this spiral plan the student is also enabled to secure a deeper insight into the topic each time he recurs to it. He is also obliged to continually apply all the important principles gained. They thus become firmly fixed in mind.

Of perhaps more importance than any of these advantages is the permanent interest that the student gains from the long-continued pursuance of the study. By constantly keeping the subject before the mind and continually applying it in manifold relations it becomes an integral part of the unified possession of the mind rather than a mass of undigested facts soon to be forgotten, which is the inevitable result of the usual arrangement of American high-school programmes.

In Germany a great deal of importance is attached to drawing in connection with mathematics. The teachers say they wish to make the instruction *anschaulich*. Constructions are made whenever possible. All tables of measurements are learned inductively and objectively. In all schools will be found model sets of weights and measures. Often I have seen scales of measurements printed on the wall in constant view. Dividers, rulers, T-squares, try-squares, etc., are always at hand.

Great stress is laid upon securing a connected view of the different processes involved. For example, it is shown that multiplication is an addition of equals, subtraction and division are the reverse of the direct processes, powers are multiples of equal factors, roots and logarithms are inversions of direct processes of involution. Then the negative, partial, irrational, imaginary, and transcendental systems lose their arbitrary appearance.*

An attempt is made to correlate mathematics with other branches, and with considerable success. Examples and problems are drawn as far as possible from *bürgerliche* life, from practical measurements necessary to be made, and from the work in physics and chemistry. History is not left out, inasmuch as the great mathematicians are considered biographically and with reference to their place in the history of the development of thought. Many of the great mathematicians having been philosophers as well, a great direct connection with the history of philosophy can be made. The story of the discovery of important theorems always adds wonderful interest.

Mathematics is often correlated with æsthetic culture, as it ought to be, since mathematical proportions are basal in the æsthetics of architecture, and to a certain extent in all true art.

One of the most impressive "correlation" lessons I have witnessed was a demonstration of the possibilities of cultivation of æsthetic ideas in connection

* See Dr. A. Thaer in Deutschlands höheres Schulwesen im 19. Jahrhundert.

with mathematics. The geometry lesson was upon mean proportionals ("golden mean" or *goldene Schmitt*). After the strictly mathematical demonstrations were completed, the application of this principle was discussed in its more utilitarian aspect, first considering more common applications, then passing to the examples in finer and more renowned architecture, and finally its application in pure art. The special application was made with reference to Raphael's most renowned masterpiece, the Sistine Madonna. The relation "the lesser part is to the greater part as the greater part is to the whole" was shown to maintain in nearly a dozen groupings of prominent points in the picture. Specimens of faulty art were shown where the picture had even to untrained eyes a seeming lack of harmony. This unharmonious aspect was shown to be a result of lack of proportion. Varieties of marginal arrangements were shown to affect the whole aspect of the picture, and most radically. Even principles of physics were re-enforced by discussing the positions of the figures. The "line of direction" was shown to be exactly over the centre of gravity. And certain other positions were only explainable by a knowledge of other physical principles. Such correlation has a true psychological basis, and can not help but create higher æsthetic ideals as well as re-enforce the scientific truths gained. The whole explanation occupied only a few minutes, and no dissipation of energy was possible. If not a single æsthetic ideal had grown out of the discussion, from the standpoint of the pedagogy which seeks only devices for

more securely implanting the cold hard facts of science, the lesson was above criticism. The four formal steps—clearness, association, system, method—had been exemplified, and had provided an application of the principles. And how much higher the aim than in wholly neglecting the application, or in making some of those vapid, senseless bases of correlation such as “estimating the worth of the tobacco chewed and smoked by a Virginia planter when studying the geography of Virginia!”*

Below are given some final examination questions, which will indicate something of the degree of proficiency required in mathematics.

Askanisches Gymnasium, Berlin, 1895.

1. In the triangle ABC draw a line xy parallel with BC so that (the line xC being also drawn) the triangles Axy and BxC shall be equal.

2. In a triangle, the side c , the difference between the other two sides a and b , the difference between the angles A and B opposite these sides is known. Determine the sides and the angles.

3. Around a cone whose radius is r the frustum of a right cone is circumscribed. The entire surfaces of the two are in the ratio of $m:n$. Determine the value of the radius of the circular bases of the second.

$$\left. \begin{array}{l} 4. \ x:y = z:u \\ \quad x + u = 13 \\ \quad y + z = 11 \\ \quad x^2 + y^2 + z^2 + u^2 = 170 \end{array} \right\} \text{solve.}$$

* As can be found in a certain American work on pedagogy.

Humboldt Gymnasium, Berlin, 1896.

1. The axes of two parabolas whose parameters are p_1 and p_2 lie along the same straight line, but in opposite directions. Determine the point in this line from which the two parabolas will appear at the same angle.

2. A train of kg weight and cm velocity is to be brought to a standstill in a m distance. Determine (a) the working power, (b) the strength of the brake, (c) the time necessary for stopping.

3. In a paraboloid of revolution whose diameter, surface, and height are known, inscribe the maximum cylinder.

E. HISTORY AND GEOGRAPHY.

3d Class, Vorschule. Home Geography (*Heimatskunde*), 2 hours. Development of geographical ideas by means of observations around the city (Berlin) and the province (Brandenburg). Introductory work by means of charts and pictures. History relating to Berlin.

Sexta. Geography, 2 hours. Fundamental principles of physical and mathematical geography. First introduction to study of relief maps, globe, and charts. Brief general view of the physical and political features of the earth.

Quinta. Geography, 2 hours. Physical and political geography of Germany. Drawing simple boundaries on blackboard (by teacher).

Quarta. Geography, 2 hours. Physical and political geography of non-German Europe, especially the Mediterranean region.

Lower Tertia. History, 2 hours. Survey of Grecian history, from Draco to the death of Alexander the Great. A brief survey of Roman history from Pyrrhus to the death of Augustine. Necessary and important parts of Oriental history of civilization. Importance of historical geography.

Lower Tertia. History and geography, 3 hours. Survey of the "Kulturgeschichte" of western Rome from the death of Augustus, then German history to the close of the Middle Ages. Review themes of Quarta. Review of political geography of Germany, excepting the German colonies. Map sketching.

Upper Tertia. History and geography, 3 hours. German history from the close of the Middle Ages to Frederick the Great. Review themes of previous class. Review physical features of Germany. Geography of German colonies. Map sketching as in Quarta.

Lower Secunda. History and geography, 3 hours. German and Prussian history from Frederick the Great to 1888. Review themes of previous year. Review geography of Europe. Elementary mathematical geography.

Upper Secunda. History and geography, 3 hours. Greek history. Roman history. Review historical and geographical themes of previous years.

Lower Prima. History and geography, 3 hours. Review of geography in connection with history. German history from 1273-1648 A. D. Most important non-German history. Review ancient history.

Upper Prima. History, 3 hours. German history, 1648-1890. Most important parts of foreign history. Review geography in connection with history.

As will be noticed from the school programmes, the geography and history work very largely coalesce. Except in the most elementary work, geography does not appear from the programmes to be set apart as a separate study. The real geography, that which deals with the subject as a consideration of the earth and its relation to man, as affecting man, and in turn being modified by man, is closely correlated with history. All the geographical factors that have influenced political, commercial, economic, or social conditions, and have helped to shape the course of historical development, are largely discussed in connection with the particular phases of history which they affect.

It is because of this close correlation of historical and geographical work that one sees history and geographical work placed together in the programmes. But it must not be inferred that they are mixed together promiscuously in the recitation. It is true that the study of topography, cartography, political and commercial geography are largely correlated with history, but an inspection of any of the programmes will show that, with the exception of the unification for purposes of review, work is carried on quite separately. In all of my visits I did not observe more than the incidental correlation of the two subjects. There were always distinct teaching periods for the two subjects. I have examined many *Schulberichte* (yearly announcements) and have found no exceptions to this division of work. Many of them read "history and geography," but immediately following the work is divided. In one, which has

the two grouped under the topic heading *Geschichte und Geographie*, I find the further division into "History, 2 hours. German history from the Reformation to the Vienna Congress. Geography, 2 hours. Non-German European physical and political geography." (Real-gymnasium, Leipzig.) Again, from the real-school in Meerane: "Geography, 2 hours. Kingdom of Saxony: general geography of the entire earth. History, 1 hour. Biography from Greek and Roman history."

The examples might be multiplied by referring to the *Schulberichte*, or to the official courses of study. It will be found that occasionally the two are taken up in the same class. But from the nature of the work it would be impossible to handle the two entirely simultaneously and do it successfully.

Whenever an understanding of geographical features is necessary to produce clear historical conceptions, the geographical instruction is given simultaneously with the historical; or whenever historical allusions will contribute anything to interest, clearness, or toward permanency of ideas, then the digression is made; otherwise the two are very properly given at separate periods.

The phases of geography mentioned at the beginning may and ought to be correlated with history, but the scientific principles relating to geological, meteorological, or physical effects must necessarily be studied in a separate class devoted to them. To stop in the midst of historical narrative and discuss fully the barometer, trade winds, or ocean tides would be exceedingly unpedagogical. I make the foregoing

suggestions because I think some Americans have wholly overestimated the extent of correlation done in German schools in these subjects. I could not agree that, "except possibly in the first two years of the course, geography is nowhere an independent study in the higher schools. The general truths of mathematical and physical geography which have no direct bearing upon the events of history are taught incidentally, one might say, in the lower grades."*

Of course, the elementary notions of geography must be built up separately, and in part before the work in history, as such, is commenced. This is accomplished in the lowest grades in the *Heimatskunde*, or home geography. This locative and descriptive, largely physical geography, is later made more physico-political, commercial, and social, and it is then that the facts of geography begin to be correlated with the historical work. The elementary work is carried on much as in our own schools. The work is begun by a consideration of home geography; from this as a basis, map language is learned, relief forms are studied from maps and globes, or, best of all, objectively; then follows a general notion of the physical and political geography of Germany.

A little later text-books are used as aids, and at the same time pupils begin to learn to sketch outlines on the little blackboards. In this the teachers are very proficient and are able to add much interest to the work. The pupils gain no very great facility in blackboard sketching, because the small amount

* School Review, May, 1897, p. 263.

of blackboard space does not afford much chance for practice. Later on physical, political, and commercial geography are studied more in detail, as may be seen by reference to the detailed outlines given above. Drawing is recommended in Prussia, especially during the last year of the work, which is usually in Tertia.

Besides the correlation with history, it is also brought into close relations with natural science. The Prussian "Lehrplan" states that "whether the instruction in geography would be better given by the teacher of natural science depends upon the personal equipment of the teachers. In general it appears more suitable to have for geography the same teacher as for natural science in the lower grades, and the same as for history in the middle grades. The reviews in the upper grades, so far as the political and physical geography are concerned, should be given by the teacher of history, and the mathematical geography should be given by the teacher of mathematics or physics."

All schools are supplied with an abundance of maps and charts to illustrate the work. Nearly all schools are in regions rich in historic landmarks, and drawings and paintings illustrating these are to be found in most schools. Relief maps and outline maps are abundant and well executed. Most teachers make effective use of photographs of various places of interest and of historic personages. The schools are usually well supplied with these, and the teacher always solicits the pupils' aid in collecting pictures bearing upon particular lessons. It was in-

teresting to note the abundance of practical objective material that was arranged in conspicuous places in the hallways and about the buildings in such a way that pupils could have them constantly before them. For example, large barometers, thermometers, weather maps, charts showing the cardinal points, charts showing the daily relative positions of the sun, moon, and the earth, etc.

The text-books are quite different from those ordinarily used in American schools. They are divided into two parts, one containing the descriptive matter and the other a separate atlas containing the maps. The latter are beautifully executed in the highest art known to book and map makers, but the descriptive texts can hardly be commended. In matter they may do, inasmuch as the teacher is the source of almost all the facts in all studies, while the text-book is intended merely to assist in reviewing and fixing the lessons; but in mechanical execution the majority of school geographies are in every way uncommendable, except in price. The print is poor, the matter crowded and wholly unattractive in arrangement. With such a prevalence of spectacled eyes as one sees in German schools, it is a wonder that such text-books are tolerated. They are usually in *brochure* form, and are therefore cheap. But better executed books are a physiological necessity, and the advantage to be derived from more attractive books is an important psychological consideration.

One of the best features of geographical instruction is that of making frequent excursions. Thus, objects are studied instead of words. In a country

so full of historic landmarks it is not difficult to make these excursions frequently and inexpensively. For example, around Leipzig are clustered many spots upon which have been enacted some of the most thrilling dramas of human life. Half an hour's walk to the eastward brings the school to the Napoleon Monument, erected in memory of the battle of Leipzig, October 18, 1813. The stone stands upon the spot where Napoleon watched the progress of the battle all one long night. On the monument is the inscription :

“HIER WEILTE NAPOLEON AM 18TEN OKT., 1813,
DIE VOELKERSCHLACHT BEOBACHTEND.
DER HERR IST DER RECHTE KRIEGSMANN,
HERR IST SEINE NAME.”

How much more of historic and patriotic interest can be infused into a class by taking them to the place and explaining the details of the battle, as well as the general plan of the war, than by reading them from a book or by simple narration !

To the north of the city within a few miles is the spot where Gustavus Adolphus fell during the Thirty Years' War. Just south of Napoleon Monument is Monarch's Hill, where the heads of three great nations met in council. Within the city are other battle monuments, also monuments to Luther, Goethe, Schiller, and other renowned Germans. In the heart of the city is Auerbach's cellar, where Goethe places a scene in *Faust*. In other parts may be found Goethe's residence when a student, Schiller's residence, the Pleisseburg Castle, the old

city hall (eight hundred years old), and scores of other landmarks too numerous to mention, had I space. All these are visited by teachers and pupils. Other cities are equally rich in associations. In the above manner history and geography are truly correlated, interest is awakened, life is quickened, and new ideals are formed.

To do likewise in America is not possible to the same extent because of distance and lack of historic landmarks, but every locality has its oldest buildings, a historic battle ground, a colonial church, an Indian council ground, or historic landmark of some sort or other. Points of geographic interest (physiographic, political, or commercial) are also usually within easy reach. To study objectively the means at command is most sure to awaken true historic and geographic interest, and that is the chief aim.

In Prussia, the *Lehrziel* or end to be attained in teaching is stated thus:

“Knowledge of the epoch-making events of the world’s history, especially of the German and Prussian history, in connection with causes, effects, and the development of historical ideas.” (Schulordnung, 1891.)

“In Bavaria the aim in the classes from the third to the fifth, to be attained mainly through biography, is the impressing of a solid foundation of historical data, and in general outlines to give a view of Greek, Roman, German, and Bavarian history. From the sixth to the ninth classes the aim should be to investigate facts more thoroughly, to awaken and develop capabilities, to rearrange and make individual

the materials that have been acquired from given standpoints." (Schulordnung, 1891.)

In Baden the course in history is so arranged that the entire province of history shall be gone over twice, and with special prominence given to ancient Roman and Grecian and German history. In the first historical instruction in Quarta and Tertia a comprehensive view is presented. Here more attention is given to the biographical side of the work. In Quarta the main portions of ancient history are considered, and during the two years in Tertia the events beginning with the middle of the seventeenth century are studied. Following this the events clustered about 1813-'14, and lastly the pivotal point in modern German history, the war of 1870-'71. During the last four years the entire work is gone over again with the view of making it a connected whole, and of course from a more philosophical point of view and in a much more comprehensive manner. During the entire course special stress is laid upon the geographical relations necessary to a clear and comprehensive grasp of the historical facts. The work is followed out according to some good text-book, with, of course, lectures or talks by the teacher to elucidate and supplement the text. Pupils are encouraged to arrange the materials in such a manner that they can talk connectedly upon topics (Schulordnung).

Throughout all Germany the courses in history, as well as those in mathematics, and in fact all other subjects, follow the spiral plan. The instruction is so arranged that the entire course forms "an

ever-ascending spiral from the apex of which an outlook over the past is obtained."* The course in history, as carried out in German schools, next to the classical branches, is in one direction one of the strongest portions of the entire school curriculum. In another significant direction it is one of the weakest parts of the curriculum. The course in history, together with the instruction in the classics, serves to shape the thinking and the course of action pursued by the Germans perhaps more than any and all other features connected with their educational system. The policy of the German people is reflected in its historical curriculum. The historical instruction contributes to make that policy what it is. In the first place, the course of instruction is grounded upon instruction in the classical period. This serves to give a wide knowledge of the past. And such a view can not but aid in creating a reverence for the past and its institutions. A thoroughly developed course, with the groundwork in the classical period of history, must impart what we term the "historic sense." It must show at what cost of time and effort all enduring institutions have been raised into existence. Such a training can not fail to tend to produce a careful, conservative, deliberative people. Institutions that have been judged fit to survive will not be swept rashly away in the flush of a momentary impulse. All German institutions are rooted deep in the past, and only those new institutions may survive which root themselves firmly in

* Lucy M. Salmon, Ed. Rev., June, 1898.

the passing generations. That which is without a wide expanse of historical background represents to a German mind the essence of instability. To them a country like America is viewed only as an experiment. They behold a heterogeneous mass of materials gathered together haphazard, and in continual danger of explosion should some slight anarchistic wave disturb its equilibrium. To a German who has never been in America it is inconceivable that there should have evolved from the heterogeneous elements any such institution as a stable government, possessing firmly founded, well-equipped and well-ordered universities, schools, churches, etc. American institutions are viewed by Germans much as they view our railroad trains—*sehr gefährlich*—wonderfully rapid but terribly dangerous and destructive.

The German venerates age, solidity, stability, and shrinks from the thoughts of hurry, boldness, and change. To him these latter mean dissolution and disintegration. Such are some of the characteristics of the Germans, and the historical instruction tends to preserve these ideals. Another feature of German life is the intense love and devotion to the Fatherland. Nowhere else, perhaps, may be witnessed such fealty to country as in Germany. Every individual feels not only a sense of duty in being a protector of his country's interests, but he feels a thrill of pride and love in having this duty confided to him. This spirit is kindled in the breast of every subject as soon as he begins to listen to nursery tales; and the feeling once awakened is never allowed to wane in inten-

sity. The historical instruction, in addition to being founded upon the past, has for its centre, from which all instruction radiates, the Fatherland. Not only German history by all pupils, but special local history of each region is thoroughly learned. The achievements of the long lines of princes, potentates, warriors, and Church Fathers can be recited with surprising glibness and accuracy by boys of a dozen years of age. No course of study is planned without having some clause to the effect that "special consideration is to be paid to German history and to the history of the province in question."

"The 'Lehrplan' of 1892 brings prominently to the front the necessity of understanding the events in German and Prussian history. It is the national history rather than the universal which is emphasized; the political, which has culminated in a new and regenerated German Empire, rather than the general, which deals with salient points in the progress of civilization. It shows clearly the determination of the Government to make use of the schools in stemming the tides of socialism and liberalism. History is to be taught not altogether as a means of intellectual training, nor as an essential part of a liberal education, nor yet as an independent science, but preeminently with a view to the making of patriotic citizens."*

A point of seeming weakness is noticeable, inasmuch as the course in history fails to give sufficient place to that which is modern and outside of Ger-

* Jas. E. Russell, *School Review*, May, 1897.

many. A careful examination of programmes fails to reveal any provision for the definite study of English or American history. Some consideration may be assumed in the study of extra-German relations of universal historical importance (*ausserdeutschen Verhältnisse von weltgeschichtliche Bedeutung*), etc., but at most it is only very superficial and insufficient. In the case of America it may be argued with some justice that it is too young a nation—that in a strict sense it has little history; but the same explanation does not apply to the instruction in its geography. Were an adequate geographical consideration accorded to it with proper historical settings, the course in this particular would not be so open to criticism. But the same feeling is manifested toward a geographical consideration of England. As a result, gross ignorance of existing conditions is manifested by even educated Germans concerning a country of twenty times the size of their own and with fifteen million more people than their own country. To many Germans New York, North America, and South America are almost synonymous terms.

But even were America to go unconsidered, except in a cursory way, England deserves thorough consideration. A country which has influenced civilization so powerfully, a country whose history is as old as that of Germany, a country which has spread its language to the uttermost parts of the earth, and which is tending rapidly toward making its language the world language, a country which has proved herself so strong a rival of Germany, and which even

has had so many interests in common with Germany, can not well be passed over with a few words.

The extreme conservatism of the Germans is one of the greatest drawbacks to their advancement. Unwilling to allow innovations, and loath to acknowledge the superiority of any other country in any particular, their eyes are not infrequently blinded to the merits of experiments and discoveries the adaptation of which would often aid in their own advancement. As indicated in another place, their extreme conservatism has allowed them to fall behind most other countries in such important directions as the education of women.

A most undesirable characteristic of the German nation noticeable to all foreigners is their lack of cosmopolitanism. Their manners, customs, institutions, machinery, implements, school furniture, manner of accomplishing all practical results, all indicate a lack of leavening ideas derived from different nationalities. No one individual or nation can monopolize all the best ideas, and in these days of rapid transit and electric communication can any nation afford to ignore the accomplishments of others? The nation that accepts the doctrine of eclecticism must profit thereby, while the one that is all absorbed and satisfied by its own achievements will as surely find itself distanced in important directions.

On the whole, I believe that the historical teaching is well done. The teachers, at least, accomplish their first point: the facts of history from the classical periods down to the present concerning those countries which are studied are firmly fixed in mind.

At the end of the secondary school course the German boys are thoroughly conversant with the history of their own country and of all those nations from which their civilization has directly or indirectly developed. They have a thoroughly built and organized background of historical events, and the only criticism that may be offered is the one previously pointed out. Their horizon extends spatially in only one direction, and that toward the Orient. But the results, from the standpoint of the nationalizing tendencies inculcated, are certainly gratifying. I believe, however, that the time is ripe for a larger world view. Broader sympathies may be fostered by extending the range of historical studies without endangering in any way the primary end now aimed at. The psychological principle of repetition is thoroughly carried out in their history teaching. The work begins in the lowest class and extends to the highest. They never feel that they have "finished" the subject. The same ground is continually crossed and recrossed, viewed from different standpoints and from positions where all can be surveyed; the relations of cause and effect are thoroughly studied until all becomes a closely and firmly associated whole. They believe in learning much about a few things instead of a little about many. In this lies their greatest pedagogical strength.

F. NATURAL SCIENCES.

Sexta. Nature lessons, 2 hours. Summer: Description of available flowering plants, considering parts and forms of roots, stems, leaves, and easily

understood flowers and fruits. Winter: A description of important mammals and birds, considering form, colour, size, the available specimens determining the species. Study modes of life, usefulness, or destructiveness.

Quinta. Nature lessons, 2 hours. Summer: Complete knowledge of outer organs of flowering plants. Description and comparison of related species that are accessible at the same time. Winter: Description of important accessible vertebrates, considering manner of life, use, or harmfulness. Fundamental principles of bone structure of man. Exercises in simple schematic drawing of what is seen.

Quarta. Nature lessons, 2 hours. Summer: A comparative description of related kinds and species of flowering plants (determined by available specimens). Consideration of natural systems of classification. Living phenomena of plants. Winter: Lower animals and their enemies. Special consideration of insects. Continue drawing what is observed.

Lower Tertia. Nature lessons, 2 hours. Summer: Description of some of the more difficult plant species to complete knowledge of form. Systematic botany and biology. Discussion of the most important useful foreign plants. Winter: Anatomy and physiology of plants. Cryptogams. Diseases of plants. In the last quarter of the year, survey of the animal kingdom. Distribution of animals.

Upper Tertia. Physiology and physics, 2 hours. Human body and care of the health. Preparatory

physical science. Mechanical phenomena. Important parts of heat.

Lower Secunda. Physics, 2 hours. Magnetism, electricity, the important chemical phenomena, acoustics, and selected sections of optics.

Upper Secunda. Physics, 2 hours. Magnetism, electricity, heat, meteorology. Review fundamentals of chemistry.

Lower Prima. Physics, 2 hours. Mechanics of solids, fluids, and gases. Acoustics.

Upper Prima. Physics, 2 hours. Optics, parts I and II. Mathematical and astronomical geography.

In the real-gymnasias and higher real-schools the same subjects and the same topics are covered, only more thoroughly. In botany and geology more is learned of microscopical structure, and classification is learned more thoroughly. In physics, more of the mathematical side of theoretical physics is covered; and in chemistry, besides taking organic chemistry in addition to the inorganic, some simple laboratory work is expected of the students. Crystallography receives more extended consideration also.

In the lower grades the work is entirely descriptive, dealing with the outward characteristics of the objects dealt with, whether plants or animals, or from the inorganic kingdom. At this age it is unnecessary to consider the minute inner organization. Microscopic structural relations and processes of development would be out of place here. "This, and a more exact knowledge of systems, as well as independent investigations, belong to the higher grades

or to private interest.”* Study at this age should give “an extensive knowledge of the home vicinity, a living *Anschauung* or mental picture of that which is foreign, an understanding of the great thoughts of Nature, a sense of respect for the smallest apparently insignificant things, a desire for and some skill in observation.”†

The courses, whether in the gymnasia or the realistic institutions, are divided into two parts: during the first four years the time is devoted to *Naturbeschreibung*, or description of Nature, while in the last five years the more serious work of physics, chemistry, and mineralogy are considered. The main difference between the courses in the classical and realistic schools is one of amount. Sometimes mineralogy and chemistry receive no consideration in the gymnasia. The differences in time and courses can be seen from the accompanying tables.

Throughout all the grades, in all branches of Nature lessons, excellent appliances are found in every school for demonstrational purposes. This material is for use almost solely by the teacher, not the pupil. There is always at hand a wealth of maps, charts, models, and apparatus. I have seen in real-schools and real-gymnasia cabinets of specimens from the animal, mineral, and vegetable kingdoms, coloured plates, and wax and *papier-maché* models, as rich in quantity and quality as those possessed by many ordinary colleges. The charts and coloured

* G. Uttendorfer, Preface to *Leitfaden der Naturkunde für mittlere und höhere Schulen*.

† *Loc. cit.*

plates are usually on stiff cardboard about 28×36 inches, and are provided with appliances for hanging them before the class when used for demonstrational purposes.

Among the plant models and plants, not only the cryptogams, but the phanerogams, are fully represented; mosses, microscopic water plants, and unicellular as well as multicellular plants and animals. In one exercise with a class of boys from thirteen to fourteen years old I saw a collection of charts and wax models, illustrating the marchantia and other liverworts, equal to any university collection I ever saw.

All schools are well equipped with the most improved apparatus and excellent cabinets of accessory materials. It will be unnecessary to enumerate the pieces of apparatus, or even to give a general outline of the accessory appliances. In the real-schools and real-gymnasias the outfit in botany, zoölogy, physics, and chemistry contain everything necessary for demonstrational purposes. There are usually materials sufficient to enable the teacher to carry on research work. In the gymnasias the outfit is usually limited to the most necessary pieces of apparatus and to typical specimens in botany and zoölogy.

But work in all schools is only demonstrational, since only a few schools are fitted up with laboratories for individual work. Some of our modern high schools, with their magnificently appointed laboratories and workshops, are beyond comparison with the German schools. All the laboratories there are may be found in the higher real-schools, and oc-

casional in the real-gymnasias. The reason for the lack of them is not difficult to find. The courses are so overcrowded that there is no time left for individual experimentation. All experiments are made by the instructor in the presence of the class. He questions as he goes along, and does not leave the experiment until the principle is understood by all. In many respects this is better than much of the so-called independent investigation that is allowed in our own high schools, and even in the colleges, where students are told to perform experiments, or are given a manual of instructions to follow. They are to experiment, observe, infer, and record. Not knowing how to observe or what to observe, nor having sufficient training to make proper inferences, the work dwindles into purposeless (unless getting through is a purpose) mechanical manipulation of apparatus, and just as mechanical recording. This is not necessary, nor is it the universal condition of affairs, for many of our high schools do most creditable work. But with inexperienced teachers the work may and often does miscarry. It is only by a judicious blending of experimentation with proper class demonstration, criticism, and questioning that the work in natural sciences is successful. If there is no experimentation the work becomes mere verbal gymnastics; if the proper class work is lacking, it dwindles into manual gymnastics or into rule-of-thumb methods at best.

The German method, although it does not permit the geniuses—and geniuses are scarce—to explore fields for themselves, at least guides and directs the

work, so that the basal principles of the science are not hurried over half realized. The fundamentals become so systematically arranged in the students' minds that they can begin individual investigation at a later date if they choose. Moreover, the experimentation, which always comes out as intended when manipulated by the teacher, kindles a spirit of enthusiasm and awakens curiosity. When apparatus is manipulated by unguided students the experiments often fail and create weariness and disgust. Manual dexterity can be acquired later more quickly than scientific principles. And yet, if time were allowed for considerable individual laboratory experimentation the courses would be much stronger than at present.

I think that in the lower classes the lack of the laboratory method is specially marked. Not that there is any lack of objective material always in the classroom, and not that it is not used, but it is used and handled exclusively by the wrong person—the teacher. I have already intimated that the charts, models, and apparatus are rich in quantity and quality, and, moreover, for botanical study all the cities have special gardens, from which plants are delivered to all the schools as they are required. By this means the schools are sure of being supplied with sufficient materials, and at the proper time, on demand.

There are often arrangements also whereby articles from museums are supplied to the schools. But with all the materials at hand for study, very little of it gets into the proper hands—the pupil's. In the

lesson on the marchantia, referred to previously, the diagrams were profuse, fine wax models were numerous, and the teacher's explanations lucid, concise, and scientific, but the majority of the class were not within twenty feet of the models, and I doubt whether a single one ever saw the real plant. There certainly were no plants in the room, and no instructions were given for procuring them. The charts and models were systematically explained, and the pupils answered well when questioned in review, but I could not help feeling that scarcely one of those boys would be able to distinguish between marchantia and mushrooms. Indeed I believe from the models and charts mushrooms would come nearer the pupils' ideas of the size. Professor Russell also writes (School Review, January, 1897) that, "while in theory each pupil is expected to have in his hands a specimen of all the common plants as they are discussed in class, I have seen the pea studied by a class of thirty boys from a model that never left the teacher's desk during the hour, and at the close of the lesson not a word was said about noting the plant in its cultivated state, although acres of it were growing within a mile of the site; but, on the contrary, the home task assigned was to copy the drawing given in the text-book. I still have my doubts whether the majority of the class did not conceive of the true flower as being about a foot in diameter."

The school excursion plays a most important rôle in the study of Nature as well as in history and geography. Its value is great, but still it can not be expected to take the place of carefully planned laboratory

investigation. From the field the relations of the different kingdoms can well be studied, the natural conditions under which various products are found and the elements of geographical distribution may be learned. From the field materials may be secured and gross anatomy observed in a general way, but it must not be allowed to usurp the rightful place of laboratory and classroom investigation.

In some schools I witnessed the attempt to teach obscure life processes, such as assimilation and reproduction in the liverworts, to very young classes. The lesson on the marchantia, before referred to, was in Quarta. This, it seems to me, was a serious error. All the pupils could carry away were words. The facts had no objective meaning.

In mineralogy the technical significance of minerals and a description of the chemical and crystallographic characters are avoided. The more outward characteristics are observed, and the general place in Nature is the chief feature to be shown.

Considerable prominence is given to the industrial value of plants, animals, and minerals. This is a point of great significance, for, while affording mental discipline, a stock of practical knowledge is being acquired. The text-books on natural science have some manifest advantages over our own. In America the writers of elementary text-books fall into the error of trying to make things very simple, and by doing so they make the instruction childish. In Germany the desire to make them systematic and logical is rather at the expense of adaptability to the learners' needs. But as far as the work is carried

on things are called by their right names, and hence no unlearning is necessitated. The future work is an extension, an "Ergänzung," and not a rectification.

Considered as a whole, I think that the results of the work in natural science are good. The strong features are its distribution through a long period of time and its correlation. By the distribution pupils are kept for a long time in acquaintance with the subjects, and the residuum of knowledge about them is much greater than can possibly result from acquaintance with the subjects for a year at most—often a term or so—and then total abandonment. In a case of simple memory—e. g., a quotation one wishes to keep in mind after learning—it is far better to repeat once a day for ten days than once an hour for ten successive hours. If the intervals be not too long the greater the length of time between repetitions the stronger will be the resulting memory.

The attention which is given to judicious correlation of subjects in the German schools leads pupils, I believe, to have a better conception of the relation which the parts of subjects bear to each other, the relation between different subjects, and to all knowledge as a unity, than is usually the case in too many of our schools. In short, the substructure of philosophical thinking is better laid than in our own schools, where pupils "finish" this subject and that and never refer to them again, and are never led to suspect that there are any relations whatever.

At the end of the school course the pupils from the gymnasia are about as far advanced in the

natural sciences as pupils from our best high schools, those from the higher real-schools a little further, especially in chemistry and mineralogy, while the gymnasial pupils are less advanced—that is, measured by the amount of ground covered. This statement is supported by the fact that the lowest courses offered by the universities are fully as elementary as those offered in our own universities. The supply is in response to a demand. It ought to be stated that in physics more attention has been given to the mathematical side than with us, so that with the principles firmly fixed in mind, even though some experimental knowledge has been slighted, their students are rather better able to begin strictly scientific considerations of the subject when they enter the university than students from our high schools.

G. GERMAN.

(a) *Vorschule.*

1st class, 7 hours. Exercises upon elementary sounds. Letters used in writing and printing (German). Reading of connected parts of primer. Writing dictated words and sentences. Short dictation lessons from the reading book which have been previously talked about and also copied. Learn to recognize nouns. Capitalization, “umlauting,” conversation exercises based upon language charts, exercises in narration.

2d class, 7 hours. Exercises in mechanical reading and conversation concerning the contents. Grammar: parts of speech, subject predicate, declension

of substantives and personal pronouns, conjugation in the direct tenses. Orthography and dictated lessons. Learning fables and poems.

3d class, 6 hours. Exercises in mechanical and expressive reading. Narration of what has been read or heard. Recitation of short poems and exercises read. Simple and complex sentences, parts of speech, conjugation in the active and passive voice in the indicative and subjunctive modes, prepositions. Dictation exercises.

(b) *Gymnasium.*

Sexta, 4 hours. Grammar: parts of speech, members of simple sentences, difference between strong and weak declensions. Correct writing from dictation. Reading prose and poetry. Fables, tales, narratives from *Vaterländischen Sage*, and history. Orareproduction of same by pupils. Memorizing and expressive recitation of poems. "Lebensbilder" from the "Vaterland." History from Kaiser Wilhelm I to Karl the Great.

Quinta, 3 hours. Simple and complex sentences, necessary parts of compound sentences. Correct writing and punctuation twice weekly in dictation exercises. Oral narration by pupils. First attempts at written reproduction (in class). Narration of stories from Greek and Roman mythology. Other work as in *Sexta*.

Quarta, 3 hours. Compound sentences. Most important parts of etymology with application to typical examples. Punctuation. Correct writing in class. Home composition every six weeks. Read

poetic and prose selections. Narration. Discussion of contents of lessons and memorizing of poems.

Lower Tertia, 2 hours. Connected view of most important grammatical laws. Home compositions, narrative, descriptive, and imaginative. Translation from a foreign language every six weeks. Written "content" exercises in class. Discussion of prose and poetic selections. (Norse and Germanic myths, sagas; general *Kulturgeschichte*, geography, natural history, epics, and especially ballads.) Memorizing and recitation of poems.

Upper Tertia, 2 hours. Written composition as in L. III. Autobiographies, individual experiences, sometimes in letter form. In general, a prominence given to poetry rather than prose. Lyrics and dramatic poetry (especially William Tell), with wider inductive teaching of poetry and rhetoric. Memorizing and recitation of poems. Read Uhland's Ernst von Schwaben, Schiller's William Tell, Ludwig der Baier, Ballads from Schiller and Uhland.

Lower Secunda, 3 hours. Practical introduction to composition writing through exercises in determining materials and arrangement in class. Seven easy compositions, especially comparative studies in connection with critical exposition. Translations from foreign languages. Written discussions to complete what has been read in class. Memorizing of poems. Read Schiller's Marie Stuart, Lessing's Minna von Barnhelm, Kleist's Prinz von Homburg, Goethe's Hermann und Dorothea, Gütz von Berlichingen. Poems from Goethe, Schiller, Uhland, and Lessing memorized.

Upper Secunda, 3 hours. Short compositions on closely allied work (as history), 7 exercises. Introduction to the Nibelungenlied, testing by the original text. Survey of Norse sagas, German mythology, epics, and lyrics. Examination of different kinds of poetry. Memorizing of poems. Discussions and reports by pupils on Middle High German poetry or modern dramas.

Lower Prima, 3 hours. Review life of Goethe. Recent period of German literature since 1805, Goethe's *Euphrosyne*; Kleist's life, in lectures; Prinz Friedrich von Homburg; Hermann's Victory; Sophocles's *Philoctetes*; Lessing's *Laokoon*, concerning *Philoctetes*; Shakespeare's *Hamlet*; *Käthchen von Heilbronn*; *Penthesilea*; Grillparzer's *Sappho*; History of literature from Luther to Lessing: *Minna von Barnhelm*, *Emilia Galotti*, *Nathan der Weise*, *Miss Sarah Sampson*, *Laokoon und Hamburg*. Drama (selected parts). Reports in connection with readings. Explanation and reading of lyrics.

Upper Prima, 3 hours. Review lives of Lessing and Goethe. *Dichtung und Wahrheit*, books 1-6, and selected parts from other works of Goethe. *Iphigenie*. *Iphigenie* of Euripides. Tasso. *Natürliche Tochter*. *Faust*, first part. Goethe's life reviewed. *Hermann und Dorothea*; *Egmont*; Schiller's criticism of *Egmont*; *Achilles*; *Götz*. Newer period of German literature since 1805. Kleist's *Prinz Friedrich von Homburg*; Hermann's Victory; *Käthchen von Heilbronn*; *Sappho*; *Ottokar*. Review Sophocles's *Ajax*. Schiller's *Bride of Messina*. Memorizing of didactic and lyric poems.

A discussion of the methods of teaching German will not be entered upon here, and the scope of the course and its distribution throughout the various years can be seen sufficiently from the outline given above. Granting that essentially the same end is accomplished in the secondary-school course in the acquisition of the mother tongue and knowledge of national literature as is accomplished in our own schools through the corresponding years, I shall direct my attention to a single phase of the work—that is, to the consideration of the amount of time devoted to attaining the same end. This seems to me a very important consideration, and one which has been almost entirely overlooked by reformers of our curricula. With all the discussion concerning the shortening of courses, enriching of courses, and with all the lamentations concerning slow progress in our schools no one, to my knowledge, has seemed impressed with the fact that an enormous amount of time is given in our curricula to the study of language—and often resulting in only a passable acquaintance, or hardly that, if we are to believe the murmurings that are heard from most of our colleges concerning the preparation of those entering.

The following figures show the amount of time spent in study of the mother tongue in some of the representative cities of the United States as compared with some of the German secondary schools. From the American cities the entire amount of time from the entrance into school to the end of the high-school course is given. The entire course,

including the three years in the Vorschule, is given for Germany.*

The following cities were taken because the facts concerning the division of time were most accessible. Many annual reports do not give specific figures, but my knowledge of the average schools throughout the country leads me to believe these are quite representative. The charts given by Dr. Harris in his *German, American, and French Schools Compared* † will verify my assumptions.

We thus see that American schools devote about twice as much time to a study of the mother tongue as German schools do. We must, of course, take

* As before, the numbers given signify the hours given per week on the topic if the whole course were reduced to one year.

Prussia	{	Gymnasium	46 hours.
		Real-gymnasium ...	48 "
		Higher real-school..	54 "
		Real-school.....	48 "
Washington, D. C.		Elementary (primary and grammar),	60;
		high school, 16 =	76.
Chicago, Ill.		Primary and grammar, 82; high school, 11 =	93.
Springfield, Mass.	{	Eng. course,	15 = 122
Primary and grammar, 107; high school +		Eng. Lat.,	12.5 = 119.5
		Classical,	7.8 = 114.8
Grand Rapids, Mich.	{	Commere. Eng.,	19 = 126
Primary and grammar, 107; high		German Eng.,	19 = 126
school +		Scientific,	20 = 127
		Classical,	11 = 118
		Coll. prep.,	7 = 82
Utica, N. Y.	{	Eng. sci.,	10.5 = 85.5
Primary and grammar, 75; high school +		English,	13 = 88
		Teachers',	12 = 87

† Report of Commissioner of Education, 1, 1888-'89, p. 53.

into consideration that German boys have religious instruction two hours weekly, which contributes not a little to their mastery of the mother tongue. Then, in most of the schools the study of Latin grammar obviates to a considerable extent the pursuit of German grammar. But even the real-schools with no classics in their courses have much less time than our schools set apart for the study of the mother tongue. Why the discrepancy? The school year is a little longer in Germany than in this country, being from ten and a half to eleven months in duration, but this accounts for only a small difference. There are, to my mind, two directions in which our schools spend altogether too much time: these are spelling and formal grammar. It is true that English orthography is exceedingly difficult and arbitrary. But do we not magnify the difficulty beyond any necessity in continually requiring children to spell words which they have not made their own? If children's requirements in spelling were limited to their usable written vocabulary, relatively more time could be given to these difficulties and a greater mastery insured in less time. German children do much more oral work than ours, and of course there are no misspelled oral words. A great many of the difficulties of even English orthography may be easily mastered when the age of discrimination and analysis is reached. The German orthography is very simple, but when we turn to a comparison of grammatical impediments the case is reversed. However, our American schools usually devote much more time to English grammar, which is one of the

simplest in all languages, than German schools do to their grammar, one of the most complex.

Again, we magnify the difficulty by requiring children to spend vast amounts of time almost uselessly by plunging them prematurely into abstractions which they do not comprehend. Were grammar reserved for its proper place the whole of English grammar necessary for any one but a philologist could be learned in one year in the high school. One's native language should be learned by imitation and not mastered by rule. Nearly all of grammar could be learned in connection with a study of the language and literature, as is done in Germany. The codes of most of the German states make it explicit that separate systematic instruction in grammar which deals with sentences devoid of connection with each other is to be prohibited. How many bookfuls of disconnected sentences do our children analyze and parse! "The teaching of German grammar as a foreign language in German schools is to be discarded," says the Prussian order of 1891. Correct speaking and writing are to be learned by habit. Then, too, they do not spend much time with formal rhetoric. The time in the higher classes is devoted to literature. Upon the average high-school pupil formal rhetoric has little more effect than to create distaste for literature and to crush out all spontaneity of expression. Rhetoric has a place, but not in the high school. In the German schools style and arrangement of composition are by no means overlooked, but the method is largely what may be called the imitative method. A pupil is never given

a composition upon matter with which he is not perfectly familiar. In the lower classes composition topics are taken from the reading books or from subjects such as *Naturkunde*, and in the higher from the literary selections. In the lower classes the teacher assists in the analysis of the theme; teacher and pupils build up the composition orally; it is then written on the blackboard, and finally in note books and corrected. The fundamental presupposition of this method is the inability of young pupils to compose and think out a series of ideas without considerable assistance. They believe, also, that style should be a matter for the eye and the ear to decide, and not for the eye alone. In the higher classes the themes for composition are usually selected from German literature. Much attention is given to the arrangement of thoughts. They even undoubtedly sacrifice originality of thought to logical arrangement. Although they have learned how to arrange any written theme, the results sometimes evidence stiffness and awkwardness rather than spontaneity.

But on the whole we may credit them with having gained the mastery of expressing thoughts correctly, although fluency of expression is less a characteristic of German than of American pupils. They have also gained a thorough acquaintance with considerable of the choicest national literature, both prose and verse. The Prussian Lehrplan (1891) claims that "instruction in German, together with religion and history, is the most significant part ethically of the organization of the higher schools." In other places it is stated to be, next to religion, the most valuable as a train-

ing for the character and the intellect. Undoubtedly the national literature is most potent in preserving the intense national pride and patriotism so characteristic of Germans. The foundation for its appreciation is laid in the schools. By the substitution of those things which are most vital and inspiring in our language—the literature and language themselves—in place of the uninteresting, and to children meaningless formal aspects, we may accomplish two things: First, much precious time can be saved; and, second, the spiritual lives of youth will be vitalized and quickened by the rich stores which the world's masters have treasured up for us.

9. FINAL EXAMINATIONS.

The purpose of the examination, as published in the *Lehrpläne und Lehraufgaben*, 1892, is to determine whether the candidate has successfully completed the work in Upper Prima. Usually pupils are not allowed to take the examination until they have been at least half a year in the highest class. The general scope of attainments required in each subject is given below:

1. Religion. Contents and connection of Scriptures, the fundamental principles of his Church confession, and chief epochs of Church history.

2. German. A composition within the candidate's ability, showing independent conclusions in orderly arrangement, and free from grammatical or compositional errors. In oral language there must be exhibited clear, correct, ready, and connected use of the mother tongue; a familiarity with the most impor-

tant sections of history, national poetry, and masterpieces of German literature.

3. Latin. Translation of the simpler portions of Cicero's Orations, Sallust, Livy, Virgil's *Æneid*, Epistles and Odes of Horace; usual laws of versification. The written work must be free from errors which show great grammatical uncertainty.

4. Greek. Ability to translate Homer, Xenophon, easier parts of Demosthenes, and Plato.

5. French. Sure understanding and fluent translation of simpler authors; exercise in oral and written use of the language.

6. History and geography. Knowledge of the epoch-making events of the world's history, especially of German and Prussian history, in connection with their causes and effects and exact location in time and place. Fundamentals of mathematical geography; important physical relations and political divisions of the earth, especially middle Europe. However, the examination covers only German and Prussian history, and takes up no portion not passed over in *Prima*.

Mathematics. Algebra and arithmetic through the binomial theorem, with positive, integral exponents, and quadratic equations. Clear, connected, and well-ordered knowledge of geometry and plane trigonometry, with ability to apply in solution of simple exercise. (Calculus frequently included.)

Physics. Clear knowledge of the laws of statics, and of motion, heat, electricity, magnetism, light, and sound.

English (if taken). Readiness in reading; some

exercise in translation of easy prose; most important grammatical rules reasonably well learned.

Hebrew (if taken). Fluent reading, acquaintance with grammatical forms, and ability to translate simpler parts of the Old Testament into German.

The final examination is to be passed before a commission, consisting of the commissioner of the school board, the gymnasial director, and the teacher under whom the particular subject is taken. The written examination in Prussia consists of: (1) A German composition (five hours); (2) a translation from German into Latin (two hours); (3) a translation from French into German (three hours); (4) a translation from Greek into German (three hours); (5) mathematics, consisting of an exercise from each of algebra, trigonometry, planimetry, and stereometry; (6) translations from Hebrew into German, and from English into German (two hours each). These are optional, except that the latter is necessary for future theological students. The examination questions are prepared by the teacher of the respective subjects, but to prevent either any possible leniency or too great difficulties he must prepare three sets of questions, which he submits to the director and the commissioner, who select one of the three sets for the examination. The law cautions against making the examination of greater difficulty than the pupils have been prepared for by their work, and also, on the other hand, stipulates that the questions must not be those recently given, and thus obviate the necessity of careful thought. The board may

substitute questions of their own choosing in place of those submitted by the teacher.

The time for the mathematical exercise, which must be completed in five forenoon hours, may be divided into two equal periods, provided that only half of the examination is given at each of the sittings. For all other examinations no pauses are allowed in the work. These seem to be especially long examination periods, notably the one in German composition. It is customary to write the composition twice, the first time writing it with reference to the content, the second time devoting especial attention to style and to handwriting as well as to making corrections. This all comes in the allotted five hours, which may at times be extended about half an hour.

All helps are, of course, excluded in the examination. In the case of translations from Greek, Hebrew, and French into German a dictionary of those languages is permitted; also a table of logarithms for the mathematical exercises. Any attempt at cheating deprives the candidate from further participation in the examination, and he may have only one more trial at a later date, or he may be excluded forever; this latter punishment must, however, be assented to by the Cultus Minister.

The examination papers are first looked over by the teacher having charge of the subject, who marks the papers and gives his estimate, not in percent values as is usual in the United States, but with the words *sehr gut*, *gut*, *genügend*, *nicht genügend* ("very good, good, sufficient, not sufficient"). Along

with the estimates of the written work the teacher is to place the estimate of the class work, but in no case may class work influence the estimates of the written work. When the teacher is through with the papers he sends them to the director, who in conference with the other members of the examining commission determine who may take the oral examination, who are to be excluded from it, or who exempted from it because of especially good work. For those who pass this written examination successfully an oral examination is yet in store. Pupils who have secured the mark *genügend* in all the written tests, and whose behaviour through the course has been faultless, are freed from the oral examination. Others who have secured the mark *genügend* in a certain number of branches may be freed from being orally examined on those.

The oral examinations are conducted by the class teacher in the presence of the examination commission (*Prüfungs Kommission*), and all the teachers of the school, and frequently the public, are invited. Sometimes the commission give the questions, and in all cases they determine the subjects for examination. The pupils are examined in groups of about ten each day. In Latin and Greek the examination consists of translations, together with occasional related questions on metre, grammar, mythological allusions, and antiquities. The selections are to be made from the work read or prepared in Prima. Prose selections must be those which have not been read before, while poetry may have been read, though not in the last half year of the course. His-

tical considerations include only Germany, especially the Prussian states, and are selected from the parts that have received special treatment in Prima. Physics is not taken as a special subject for examination, but may be treated of in connection with mathematics. Religious questions are confined to topics that have received exhaustive treatment in Prima.

In making the final estimates the class markings are to be reckoned in with the others. When the mark *nicht genügend* ("not sufficient") has not been given in any obligatory subject, the candidate is considered to have passed. A failure in one branch may be offset by very good marks in another, in certain cases. Failures in German, and in both Greek and Latin, can not be counterbalanced by substitutes. They form the kernel of the instruction, and failures in all these mean nearly total failure. *Nicht genügend* in one of the classics may be counterbalanced only by good marks in the other or by German or mathematics, and a poor mark in mathematics is only offset by one of the classics or German.

According to Wendt, a good deal of liberality is extended toward candidates in the examination, the stress being laid upon their ability to think carefully and clearly rather than upon the mass of facts they may have accumulated. He writes* that "with justice, more value is placed in the examination upon the power of the pupils, and upon the manifestation of their maturity of judgment, than upon the know-

* Rein's *Encyclopädisches Handbuch der Pädagogik*, III, p. 159.

ing facts. The recollection of former accomplishments should also be taken into consideration, as well as the not entirely just results of the examination, which may be influenced by all sorts of accidental features. Repetition is at once necessary and unavoidable in all school work, and hence it is not difficult to understand that the entire examination of the pupils should not appear otherwise than as the usual final exercise, differing only in so far as it is held in the presence of the Government Commission, and possibly other visitors, and consequently may result in a little greater tension on the part of those whose maturity is in doubt." I have been informed by teachers in the schools, also, that the examination is regarded simply as a usual lesson, held, however, in the presence of visitors. Surely these are rational views concerning final examinations.

Although there are not many important deviations from the Prussian plan in other states, yet a few variations may be noted. In Bavaria the final written examination lasts four days and is apportioned as follows :

1st day	{	7-11 A. M.	Translation, German into Latin.
		3-5 P. M.	Religious composition.
2d day		7-11 A. M.	German composition.
3d day	{	7-10 A. M.	Translation, Greek into German.
		3-5 P. M.	" French into German.
4th day		7-11	Mathematics and physics.

The examination questions are prepared by the Minister of Instruction, sent sealed to the examination commission, and opened in the presence of the class at the hour of examination.

In some schools the marks during the whole course count as a part of the final standings, while in others—Saxony for example—only the last year, or the last four semesters, are taken into account. Some schools have several examinations yearly to determine the averages, and for promotions, while others have only the written examination, and the public examination at the close of the year at Easter.

CHAPTER V.

SECONDARY AND HIGHER EDUCATION OF WOMEN.

I. CLASSIFICATION OF GIRLS' SCHOOLS.

THERE are at present in Germany four classes of schools in which girls receive their elementary and secondary education. Only a few receive any higher or university training. These schools are :

(a) The Common Schools (burgher schools or people's schools), all public, and open to girls and boys, though they are instructed separately except in the lowest classes.

(b) The Girls' Intermediate Schools (*Mädchen Mittelschulen*), public and private, for girls only.

(c) The Girls' Higher Schools (*höhere Mädchen-schulen*), public and private, for girls only.

(d) The Girls' Gymnasias (*Mädchen Gymnasia*), so far all private, buildings and appliances sometimes furnished by the city.

These do not, of course, include the many technical schools for household industries, nor the normal schools (*Lehrerin Seminäre*). The last are also considered as technical schools, and are not a part of the general system of education, having for its aim the imparting of general information and culture.

The first-named schools, being elementary schools, do not fall within the scope of this discussion. It may, however, be said in passing that the people's schools do not form the foundation upon which the more elaborate secondary and higher education rests.

As was pointed out with reference to secondary schools for boys, girls' high schools form a system by themselves, and are not the middle frustum of an educational pyramid. Girls as well as boys have their education determined by the surroundings into which they are born. If born under a lucky star they may receive the benefits of more than the proverbial R's; if, however, they are born of parents who are hewers of wood and drawers of water they stand a fair show of following the same occupations.

The prevailing view of the Germans places the girls' intermediate school and the girls' higher schools in the same category as the people's schools. They are all classed as *niedrige Schulen*,* or elementary schools. The courses of study in the people's schools and the intermediate schools for girls contain about the same branches of instruction. The ordinary burgher school course of eight years, however, seldom contains a foreign modern language, while the higher burgher school courses and those in the girls' intermediate schools usually do. The latter, at least, seldom exist without offering instruction in one foreign language.

The girls' intermediate school follows a somewhat higher aim than the burgher school, and of-

* See Zeitschrift für weibliche Bildung, 1896, p. 63.

fers, besides the extra language training, a general preparation for some practical industrial or clerical occupation. They must have at least five classes, though the number of years in the course is not definite, and no class may contain more than fifty pupils. More would detract from the efficiency of the work, and reduce it to the level of the people's school with its sometimes overcrowded conditions.*

Officially the girls' higher schools belong in the same class with the intermediate schools; but, however, after earnest striving for recognition as secondary institutions of learning like secondary schools for boys, they have at least received practical though not official recognition as such.

A distinction exists between the girls' higher schools and the intermediate schools. The distinction was decided upon at a conference held in 1873, and has been operative ever since, especially in Prussia. From the tabulation of schools it will be seen that only one class, the girls' higher schools, are recognised in the states outside of Prussia. According to the decisions of the conference, the fully developed schools with ten-year courses are to be recognised as girls' higher schools. The course must include two foreign languages as obligatory subjects, and a general, deeper consideration of courses, such as can be given by academic (university) trained teachers.

The intermediate schools were to include those schools with eight-year courses, and which confined

* See *Zeitschrift für weibliche Bildung*, 1896, p. 62.

themselves to the pursuit of one foreign language. The instruction in general was to be of a more practical nature, fitted to the needs of everyday life of the citizen (*bürgerlichen Leben*).*

A girls' higher school must have at least nine years in its course (beginning with the fourth school year), with at least seven classes receiving instruction. Its aim is considered higher than that of the intermediate school. Two modern foreign languages are given instead of one, and all technical training is prohibited.†

However, certain technical or industrial branches may be elective. The schools are under the Government, and the teachers, as above indicated, must have received professional or university training. Theoretically the course of instruction closes with the fifteenth year of age, but practically it frequently extends through an additional year, even though only the nine grades of work are attempted.

The Minister of Instruction, Dr. Bosse, in a general order, May 31, 1894, defined the position occupied by the girls' schools of all classes, and also made imperative many points only partially realized before. The order relates to the regulations concerning buildings, size of classes, ends to be attained, etc. It is as follows:‡

1. The number of pupils shall not exceed forty in any class.

2. The school room must contain at least 0.8 square metres floor space for each pupil, and in its

* Zeitschrift für weibliche Bildung, 1894.

† Ibid., 1896, p. 63, to 1897, p. 3. ‡ Ibid., 1894, p. 322 *et seq.*

entirety must contain at least 24 square metres floor space, and also be sufficiently high. Each room must be sufficiently lighted, provided with fresh air, be protected against storms, and the windows properly curtained to protect from the sunshine. The light must come from the left side of the pupils' desks and seats must be suited to the size of the pupils, and so arranged that they may work without injury to their health. Hooks for garments must be placed in corridors outside of the class rooms.

3. Schools having seven or more grades must have suitable separate rooms for drawing, singing, and gymnastics; also, a separate room must be provided for the use of teachers during free periods and between recitations.

4. Every school must have a sufficiently large garden, courtyard, or other place where pupils may move about freely during pauses between classes.

5. To every school room belong two tables, one teacher's chair, and one or more cupboards for preserving books, handwork, etc.

6. Every school must possess a carefully selected library for the use of pupils, which is to be under the oversight and management of the teachers.

7. For instructional purposes there are necessary:

(a) At least one copy of each book used in school.

(b) At least one globe.

(c) For the instructional exercises of several classes, the corresponding *Anschaunungs* material (for object lessons), geographical wall maps, drawing models, cabinet of natural curiosities, and apparatus.

(*d*) The necessary reading and arithmetical material for the lowest classes.

(*e*) A good piano.

For evangelical schools :

(*f*) A sufficient number of Bibles and song books.

(*g*) In all classes a class book called the "log-book" is to be kept, and it must always be in readiness to be inspected. In this book each teacher must indicate exactly the material gone over during a recitation, also the lesson assigned for the next recitation.

Besides this, each teacher must have a list of his pupils, which must indicate any lessons assigned to individuals ; also a school day-book, in which the cases of negligence and correction or punishment are exactly recorded. A programme of exercises must hang in every room, and the plan of studies must be always at hand in the class room.

The director must keep a school chronicle and a *Stammlist* (genealogical list), as well as a directory of entering and leaving.

(*h*) In the selection of text-books which pupils must purchase care is to be exercised to make the list as small as possible. Books are to be so selected as to make all dictations, and *Ausarbeitung* (elaboration) on the part of the pupils unnecessary. Such *Ausarbeitungen* are not to be permitted even as voluntary work.

8. Each pupil receives, on entrance to the school and when passing to a new grade, a list of all books and appliances which she is obliged to purchase. Pupils must not be permitted to voluntarily pur-

chase text-books, outlines, song books, etc., that are not indicated on the list.

9. It is desirable, whenever possible, that pupils be provided with two copies of the various text-books and other necessary books, so as to obviate carrying them to and from school. The school-bag and the maps should be under the teacher's inspection, in order to prevent overloading pupils with books, etc.

10. The highest number of weekly hours of instruction in the first school year is eighteen, the second twenty, the third twenty-two, the fourth twenty-eight, and for the following years each thirty. All subjects of instruction are obligatory. To be freed from technical instruction on account of ill health, a physician's certificate is necessary.

11. In arranging the daily programme care is to be taken to place those subjects requiring constant use of the eyesight (reading, writing, drawing, geography, industrial handwork) in the hours of clearest daylight.

If possible, the instruction in religion should come first in the morning.

Studies requiring severe reflection should not follow one another in the daily programme.

12. There must be pauses of ten minutes after each hour of instruction, except after the second and fourth hours of instruction, when there must be pauses of fifteen minutes. (The recitation periods are thus from forty-five to fifty minutes long.)

13. At least during the fifteen-minutes pauses the pupils must leave the class rooms to give chance

to air the buildings. When the weather permits, pupils should move about in the open air.

14. The chief stress of school work should be laid upon the class-room instruction. No exercises should be assigned for home work except those that have been previously prepared in class in such a way that the pupils can accomplish them unaided.

The home work shall be, for the lower grades, at most one hour daily; for the middle grades, at most one and a half hour daily; for the highest grades, at most two hours daily.

15. No home work shall be assigned in the forenoon to be prepared in the afternoon.

16. No work is to be assigned for the vacations—not even to volunteers.

17. Material to be memorized is to be carefully selected, definitely assigned, and as far as possible to be indicated in the plan of studies for the entire year.

18. Each teacher must indicate the maximum amount of material in each German composition. In general it is better to assign frequent exercises than long ones.

19. Extemporaneous and home compositions are permitted as exercises, but not to count as examinations, especially for promotion.

20. All written work must be carefully corrected by the pupils after suggestions by the teacher. It must bear the date of handing in and of the corrections.

21. Drawings and maps shall not be given as home work.

22. Work of any sort as punishment is prohibited.

23. Hand industrial work, drawing, and writing exercises must not be carried on simultaneously with exercises in foreign languages or lectures in the same room.

24. Review of previously considered work must take place daily, so that special reviews of entire sections of work will be unnecessary.

25. Should a pupil necessarily be prohibited from promotion, the parents must be first notified. During the period the pupil is held back she must be both busy and under guidance.

26. Parents are to receive at least half yearly a certificate indicating their children's conduct, industry, and accomplishments in the individual branches.

27. Public examinations are prohibited.

2. COURSES OF STUDY IN GIRLS' SCHOOLS.

The following course of study is fairly representative of the courses usually pursued in the girls' higher schools. It is the course as pursued in the *höhere Mädchenschule* in Leipzig, and arranged according to the general plan for Saxony which has been operative ever since 1878. The school is a very large one, employing twenty-two teachers, five of whom are women, and having, during 1896-'97, five hundred and thirty-five pupils.

Like most of the higher schools for girls, it has ten classes (grades), the first three of which take the place of the corresponding years in the people's schools. The teachers prefer to have the pupils enter this school for their first instruction, as the

course is apt to be less thoroughly carried out in the people's schools, and frequently when pupils enter the advanced classes from the latter they are obliged to repeat some of the work already gone over, which means a loss of time on the part of the pupils.

Programme of Study in Leipzig Girls' Higher School.

	X	IX	VIII	VII	VI	V	IV	III	II	I	Total.
Religion	2	2	2	3	3	3	3	2	2	2	24
German	8	8	8	6	4	4	4	4	4	4	54
French .....	..	..	..	4	4	5	4	5	5	5	32
English .....	..	..	..	..	..	3	4	4	4	4	15
History .....	..	..	..	..	2	2	2	2	2	2	12
Geography .....	..	1	1	1	1	2	2	2	2	2	15
Natural science ..	..	1	1	1	2	2	2	2	2	2	15
Mathematics	4	4	4	4	3	3	2	2	2	2	30
Writing	4	4	4	3	2	1	..	..	..	..	18
Drawing .....	..	..	..	..	2	2	2	2	2	2	12
Singing .....	..	..	..	2	2	2	2	1	1	1	11
Gymnastics .....	..	..	2	2	2	2	2	2	2	2	16
Needlework .....	..	2	2	2	2	2	2	2	2	2	18
	18	22	24	28	30	30	30	30	30	30	272

NOTE.—Class X is the lowest class, and Class I the highest.

Class X. Religion, 2 hours. Sixteen stories from the Old and the New Testaments. Proverbs, prayers, and songs memorized.

German, 12 hours. (a) *Anschaunungs* (observational) instruction. Two half hours weekly conversation exercises from the following *Anschaunung* groups: school and house; garden and meadow; field and forest; land life; happy hours; verses from Gull, Hey, Dieffenbach, Reinick, and others memorized.

(b) Reading and writing, use first reading book. In the last half of the year the letters arranged in the writing exercise in a methodical order for the purpose of bringing out beauty of form. The simplest

orthographical rules given, and pupils exercised on examples illustrating the same.

Arithmetic. Fundamental operations with numbers from 1 to 20.

Class IX. Religion, 2 hours. Twenty-three stories from the Old Testament and twenty-five from the New Testament related, and suitable pictures studied in connection with them; also appropriate proverbs and songs memorized.

German, 8 hours. Easy and well-articulated reading, reading book. Memorizing short prose selections and poems. Weekly exercises in copying and dictation to insure good style. Elements of theory of sounds, syllables, and words. Short home repetition exercises of the same.

Home Geography and History (*Heimatskunde*), 1 hour. Dwelling house. City and village, and their inhabitants. Leipzig and vicinity; chief streets and *Plätze*, especially the inner city according to the city maps. Easiest fundamental geographical concepts.

Nature lessons, 1 hour. In summer consider plants in the vicinity; in winter, description of animals in the vicinity.

Arithmetic, 4 hours. Numbers from 4 to 100.

Writing, 4 hours. Exercises in German and Latin script.

Knitting, 2 hours. First exercises in knitting. A pair of stockings begun.

Class VIII. Religion, 2 hours. Review biblical history studied in previous classes. Proverbs, strophes from songs, the Ten Commandments, without Luther's interpretation.

German, 8 hours. Exercises in reading, especially for the contents of the lessons. Stories from history related. Prose and poetic selections memorized. Four parts of speech learned. A knowledge of the simple sentence and its members learned in connection with model sentences, and selections in reading. Exercises in declensions and conjugations through sentential use. Cultivate good style and accuracy (*Rechtschreibung*) through study of examples. Spelling, division of polysyllabic words, copying. Change from German to Latin script, and *vice versa*, word-building, and prepared dictation exercises. A weekly written grammatical exercise or composition.

Geography, 1 hour. Home geography and history of a wider extent than in previous class. Wall map of city. Leading men of the city.

Natural history, 1 hour. Plants, mammals, birds. Exercises on natural history from books, with direct observation of objects whenever possible. Observation exercises.

Arithmetic, 4 hours. Review numbers to 100, fixing firmly operations of multiplication and division. Numbers to 1,000. Twenty-six written exercises.

Writing, 4 hours. German script. Especial attention to Latin script in words and sentences, using materials from other class instruction. Exercise on the figures.

Gymnastics, 2 hours.

Needlework, 2 hours. Complete the stockings begun in Class IX.

Class VII. Religion, 3 hours. Old and New Testament history. Sixteen proverbs. Articles I

and III of the Creed, without interpretation. Five hymns.

German, 6 hours. Grammar. Extended consideration of the simple sentence. Twenty compositions, thirty-nine dictation exercises, fifteen declamations. Reading from reading book.

French, 4 hours. Thirty-seven pages of reader No. I. Thirty-two written exercises. Dictation exercises, compositions, conversation, memorizing of poems and songs.

Geography, 1 hour. Geography of Saxony.

Natural history, 1 hour. Consider various animals and plants according to Terks's text-book, Part I.

Arithmetic, 4 hours. Review numbers to 1,000. Four fundamental operations with whole numbers. Exercise book.

Writing, 3 hours. Capitals and small letters in German and Latin script. Groups of words and short sentences. Foreign words, French vocables. Figures.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Knitting of a pair of stockings.

Class VI. Religion, 3 hours. Biblical history of New Testament. Thirty-eight proverbs reviewed and learned. First and second part of the Creed. Numerous hymns and songs reviewed and learned. Geography of Palestine.

German, 4 hours. Grammar: Etymology. Twenty-one compositions, thirty-four dictation exercises, twelve declamations. Reading from reading book.

French, 4 hours. Reading book No. I. Thirty-six written exercises. Poems and prose selections memorized; conversation exercises in connection with these.

History, 2 hours. Sagas of classical antiquity. German sagas (Nibelungen and Gudrun). Middle ages to time of Rudolf of Hapsburg.

Geography, 2 hours. Saxony reviewed. German Empire. Brief survey of European countries.

Natural history, 2 hours. Botany and zoölogy according to Terks's text-book, Part II. Herbarium prepared under direction of the instructor.

Arithmetic, 3 hours. Reduction. The four operations with various kinds of integral numbers. Time computation. Twenty written exercises.

Drawing, 2 hours. Perpendicular, horizontal, and diagonal lines. Square, equiangular triangle, hexagon, octagon, circle, angle.

Writing, 2 hours. Continuance of previous work.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Exercise in sewing.

Class V. Religion, 3 hours. Review first and second parts of Creed, with more thorough consideration. Review former proverbs. Fifty-three proverbs and eight songs learned. The parables of Jesus.

German, 4 hours. Grammar. Sentences and punctuation; sentential analysis. Reading of model prose and poetry. Memorize poems. Stories related by pupils. Thirty-six dictation exercises and twenty-one compositions.

French, 5 hours. Reading book No. II, lessons 1 to 24. Thirty-five written exercises.

History, 2 hours. From 1492 to the present.

Geography, 2 hours. Fundamental concepts of universal geography. The non-European countries.

Natural history, 2 hours. Botany and zoölogy according to text-book of Terks, Part III. Continue the herbarium.

Arithmetic, 3 hours. The four operations with common and decimal fractions. Exercise book No. IX. Twenty written exercises.

Writing, 1 hour. Mainly exercise on Latin script.

Drawing, 2 hours. Pentagon, ellipse, spirals, drawing from Nature.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Cutting and sewing a girl's linen shirt.

Class IV. Religion, 3 hours. Review and study more thoroughly the second and third parts of the Creed. Apostolical history. Review previously learned proverbs, learn fifty-three additional, and eight songs.

German, 4 hours. Grammar according to Hoffman's theory of sentences and punctuation. Model prose read. Poetry learned and declaimed. Fifteen narrative and descriptive compositions. Fifteen dictation exercises.

French, 4 hours. Reading book No. III, lessons 1-14 (irregular verbs). Thirty-five written exercises. Memorize prose and poetry. Conversation.

English, 3 hours. First work in English. Reading and grammar. Oral and written exercises. Declamations. Thirty-six written exercises.

History, 2 hours. German history to the present.

Geography, 2 hours. Physical and political geography of Europe, with special attention to Germany.

Natural history, 2 hours. Botany and zoölogy according to Terks's text-book, Part IV. Complete the herbarium.

Drawing, 2 hours. Draw pressed plants; proper art word description and modelling of same. Designs for fancy work. Copying, enlarging, and changing of more difficult ornaments. Spirals. Decoration with calyxes, rosettes, etc.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Cutting and sewing a man's shirt.

Class III. Religion, 2 hours. Fourth and fifth parts of Creed. Review first and second parts. Christ's Sermon on the Mount. Thirty-five proverbs and four hymns learned; previous ones reviewed.

German, 4 hours. Review and continue syntax. Most important portions of prosody. Read standard prose and poetry, including William Tell. Declamation of selected poems (especially Schiller's). Twelve compositions, as follows: 1. Woods of Leipzig in the spring. 2. Advantages of country life. 3. An unlucky summer journey. 4. Theseus. 5. The duck's festival. 6. The dragon of Rhodes. 7. Autumn and its gifts. 8. Preparation for Christmas. 9. The Cranes of Ibis. 10. Snow. 11. Tell's imprisonment and liberation. 12. The Crucifixion (examination composition).

French, 5 hours. Reader No. III, lessons 13-28. Memorize prose and poetical selections. Thirty-six

written exercises. Dictations, compositions. Read *Recueil de Contes et Récits pour la Jeunesse*, Vol. I. Conversation.

English, 4 hours. Grammar: Etymology. Read from Vietor and Dörr: 1. At home. 2. At school. 3. Farm, garden, fields. 4. Home life. 5. England and the English. Fairy tales and stories. Numerous poems and prose selections memorized and conversation exercises in connection with them. Most of the instruction given in English. Pictures used to give concrete illustrations. Thirty-four written exercises in connection with the reading exercises, consisting of grammatical exercises, dictations, translations, compositions.

History, 2 hours. Ancient history.

Geography, 2 hours. America. Brief survey over Asia, Africa, Australia. Europe reviewed.

Natural history, 2 hours. Structure and life processes of the human body. Text-book, Terks's Outlines, § 1-28. Winter semester: Physics. Simplest phenomena in the mechanics of heat, magnetism, electricity.

Arithmetic, 2 hours. Proportion, percentage, interest, discount, alligation. Mensuration: square, rectangle, cube, prism. Fifteen written exercises.

Drawing, 2 hours. Drawing from models: cube, cross, pyramid in various positions. From Nature in outline.

Singing, 1 hour.

Gymnastics, 2 hours.

Needlework, 2 hours. Various kinds of stitching, as double-cross, box, and outline.

Class II. Religion, 2 hours. Books of the Old Testament. Church history to the time of Luther. Review the catechism, hymns, and proverbs.

German, 4 hours. German literature from the beginning to the time of Luther and Hans Sachs. Read model prose and poetry. Nibelungen und Gudrunlied. Goethe's Hermann und Dorothea, Schiller's Jungfrau von Orleans. Declamations, compositions. Siegfried in Worms (in class). First scene from William Tell in narrative form. The Savage, a character sketch. The Burgundian on the Danube (in class). Gudrun's Leiden und Errettung. Contents of the prologue to the Jungfrau von Orleans. Joan as a prophetess before the king (in class). Der arme Heinrich as given by Hartmann von Aue. Parzival bei Gurnemanz. Joan as a prisoner in the tower (examination exercise).

French, 5 hours. Reading book finished. Other prose and poetry. Memorize poetry and prose. Thirty-five written exercises, consisting of themes, impromptus, dictations, compositions. The instruction mainly in French.

English, 4 hours. Grammar according to Rauch. English repetitional grammar. Read Burnett's Little Lord Fauntleroy; Ewing's Story of a Short Life; conversations and oral reports. Thirty-seven written exercises.

History, 2 hours. Mediæval and modern history to the Thirty Years' War.

Geography, 2 hours. Most important portions of mathematical geography. Asia, Africa, Australia. America and Europe reviewed.

Nature lessons, 2 hours. Physics: Sound, light, heat, magnetism, electricity. Fundamentals of mechanics of solids, liquids, and gases. Reviews.

Arithmetic, 1 hour. Proportion, percentage, profit and loss, interest, duties and customs, discount, business calculations. Twelve written exercises.

Geometry, 1 hour. Computation of rectilinear surfaces.

Drawing, 2 hours. Technical exercises with crayon and eraser. Shading the cylinder, fluted surfaces, sphere, and simple natural objects.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Darning in simple mesh-work and tulle. Patching.

Class I. Religion, 2 hours. Books of the New Testament according to origin and contents. Church history from Luther to the present. The Sermon on the Mount. Review the catechism, the hymns, and songs.

German, 4 hours. Modern German literature, with special consideration of the classical period. Read Lessing's *Minna von Barnhelm*; Schiller's *Maria Stuart*, *Wallenstein*; Goethe's *Iphigenie*; Lecture on *Dichtung und Wahrheit*; Schiller's and Goethe's poems. Poems memorized. Read also model prose and poetry from reader. Every week a report by the students on some self-selected topic. Ten compositions. Themes as follows: 1. Severe punishment (in the case of *Maria Stuart*). 2. Short exposition of the rules for the French subjunctive. 3. The sightseer, a trip through the Leipzig Messe. 4. A painting from the city museum. 5. What

evidences of Minna's character are gained from the Riccaut scene? 6. To what extent can one determine from the German words of Riccaut that he is French? 7. My favourite occupations. 8. My favourite reading. 9*a*. My last hour in history. 9*b*. My last lesson in chemistry (class exercise). 10. Visit to a court. 11. Iphigenie's true love. 12. Three themes selected from the Festspiel, Deutsches Frauenleben. 13. The importance of hills and rivers in German commerce. 14. What evidences of superstition do we find in Schiller's Wallenstein? 15*a*. Too late (as given in Tennyson's Enoch Arden); 15*b*. Saved (as in Moret's Anarchiste). Shall we call Thekla in Wallenstein a weak character?

French, 5 hours. Grammar in connection with reading. Reading from reader; also Scribe, *Mon Étoile*, Choix de nouvelles III, and Scribe and Legouv  , *La bataille de Dames*. Thirty written exercises, dictations, translations, and compositions. Conversation. Reports by the pupils on self-selected subjects.

English, 4 hours. Grammar. The most important chapters of English syntax, with special attention to verbs, infinitives, participles and gerundives, prepositions and conjunctions, according to Rauch's Repetitional Grammar; thirty written exercises (translations, dictations, compositions, letters). Literature: Survey of the development of English literature. Special stress on Chaucer, Spenser, Shakespeare (short history of the English drama), Milton, Scott, Byron, Bulwer, Tennyson. Lectures and biographies are given in English. Read Ten-

nyson's Enoch Arden. Poems from Gropp and Hausknecht's collection. Massey's In the Struggle of Life. Bulwer's The Lady of Lyons. Conversation: Anglicisms. Phraseology from home, business, and social life. Lectures by students in English on self-selected themes. Recitation of English poems and memorizing portions of Shakespeare and Tennyson.

History, 2 hours. History of Germany and the other powers from the Thirty Years' War to 1870, giving special attention to the *Kulturgeschichte* (institutional history). Elements of economics.

Geography, 2 hours. Mathematical and physical geography. Germany.

Nature lessons, 2 hours. Chemistry and mineralogy (text-book).

Arithmetic, 1 hour. Discount, business arithmetic, alligation.

Geometry, 1 hour. Important theorems of planimetry reviewed; cube, prism, cylinder, cone, and sphere.

Drawing, 2 hours. Shading plaster ornaments according to models. Painting simple natural objects in water colours.

Singing and gymnastics, 2 hours each.

Needlework, 2 hours. Cutting and sewing; coarse and fine work. Machine sewing. Embroidery, fancy needlework, and painting upon cloth, etc.

As in the other schools of Germany, in the girls' schools the system of departmental teaching is carried out, except in the lowest three classes, which have the same teacher during the entire day. This

plan is in vogue in nearly all German schools, and it has manifest advantages over the American system, which requires the same person to be teacher of all subjects. There are some disadvantages, however, from having so many different teachers, especially from the standpoint of authority and discipline, but the advantages probably outweigh the disadvantages. When all the teachers are thoroughly trained, and the supervision of the entire course is thorough, the danger from lack of balance and proper correlation is not great.

3. DISTRIBUTION OF GIRLS' SCHOOLS.

At the end of this section will be found some tables showing the distribution of girls' schools throughout the whole Empire, with the number of pupils in attendance and the number and sex of the teachers in charge.

From those tables and the data here subjoined, we notice some striking illustrations of the meagre efforts toward higher education of women as compared with those for men. Statistics for the entire Empire are imperfect, and hence Prussian statistics will in the main be quoted.

In the people's schools of Prussia, which are free to both sexes, we find that in 1891 they were attended by 2,467,558 boys and 2,448,918 girls, or by nearly as many girls as boys. It must be considered, however, that a large number of boys, and girls also, were in the secondary schools, which begin with the fourth year of school life, and hence we can not estimate exactly the proportion that took advantage

of the public elementary training offered. During the same year, 82,350 girls received instruction in the intermediate and higher girls' schools, and 48,920 boys received instruction in the intermediate schools. The entire number of pupils receiving secondary instruction in Prussia during 1891 was distributed as follows :

BOYS.

Gymnasias, real-gymnasias, real-schools, etc....	136,000
Vorschulen.....	21,000
Intermediate schools.....	48,920
In other private schools about.....	16,000
Total.....	221,920

GIRLS.

In public intermediate schools and higher...	82,350
In private intermediate schools.....	65,766
Total.....	148,116

These figures indicate two facts, viz.: (a) While the numbers of boys and girls receiving elementary instruction in the people's schools are nearly equal, the number of boys receiving secondary instruction is somewhere near seventy thousand in excess of the number of girls. (b) That only about fifty-five per cent of girls have higher training provided for them in public schools, while about forty-five per cent must receive their secondary training in private institutions. Less than ten per cent of all the boys receive their secondary instruction in private schools.*

* To be sure, the expense of attending a private school is not much different from that of attending a public school, since tuition must be paid in either case, but the public school grants

300 SECONDARY SCHOOL SYSTEM OF GERMANY.

Thus the higher education of girls in Prussia is more the care of private enterprise than of the state.

In this connection it is interesting to note the relative proportion of male and female teachers in Prussia, and also the means provided for their professional training apart from the general training received in the lower schools.

	Men.	Women.
Public girls' higher schools—regular teachers.	973	866
Public intermediate girls' schools—regular teachers	460	323
Public schools above grade of people's schools	449	87
In the various forms above assistant teachers.	1,073	34
	<hr/>	<hr/>
Total for girls' higher schools.....	2,955	1,310

Public people's schools, regular teachers and assistants: men, 63,237; women, 8,494. This shows that about thirty per cent of the teaching force in all the public secondary schools for girls are women, while in the public people's schools there are only about twelve per cent of women.

Turning to the private schools for girls, we find the conditions reversed, which would appear to indicate that were the wishes of patrons consulted more, and were the conditions not imposed by central authority, the number of women teachers, especially in charge of girls' instruction, would be much larger.*

privileges with its diplomas that the private schools are not empowered to do.

* Miss Lange states (*Entwicklung und Stand des höheren Mädchenschulwesens in Deutschland*, p. 13) that in the public higher girls' schools from ninety-one to ninety-two per cent of

In the six hundred and forty-seven private higher girls' schools giving instruction to 57,942 girls, there were during the same year, 1891 :

Men with permanent positions..	112	} 2,599 regular teachers.
Women with permanent positions	2,487	
Men full assistants.....	18	} 2,453 assistants.
Women full assistants.....	246	
Men partial assistants	1,690	
Women partial assistants	499	
Women assistants in industrial work...		1,072.

Instead of the small proportion of women noticeable in the public schools; we find about ninety-five per cent of the regular teachers were women, while those occupying the assistants' positions were about seventy-eight per cent men.

The state does not seem to care to increase the number of women teachers very rapidly, if we are to judge from the professional training provided for them, as shown in the following schedule :

NORMAL SCHOOLS.	Number yearly graduates.	Costs to state.	Number positions open.
Men 3	3,300	4,404,879 M.	
Women..... 2	230	503,602 M.	550

This left three hundred and twenty of the necessary women teachers to secure the requisite professional training in some private institution. The above does not adequately represent the dispropor-

all teachers are men, and only eight or nine per cent women. But in the private higher girls' schools eighty-seven per cent to eighty-eight per cent of the teachers are women, and only twelve to thirteen per cent are men.

tionate provision made for women to prepare themselves for the profession of teaching, since the universities were at that time all closed to women, though practically all the men teachers in the secondary schools received their training there. Moreover, the gymnasial and other certificates from the boys' schools give permission to take the examinations for teaching, and the institutions provide more adequate training than any of the girls' higher schools.*

The following table showing the distribution of girls' higher schools, teachers, and pupils, is compiled from various reports and tables given by Helene

Distribution of Schools, Teachers, and Pupils.

	No. of schools.	No. of pupils.	Male teachers.	Female teachers.	Men assistants.	Female assistants.	Female assistants in sewing, etc.
<i>Prussia.</i>							
Public higher girls' schools	206	44,788	973	866	295	58	368
Public girls' int. schools...	92	28,679	401	356	65	28	353
Public mixed int.....	68	8,893					
Private higher girls' schools	647	57,942	130	2,733	1,690	499	1,072
Other higher girls' schools.	291	7,824					
<i>Bavaria (1891).</i>							
Public	24	13,770	592	1,077			
Private	103						
<i>Württemberg (1890).</i>							
Public	9	1,853	62	42			
Private	4	1,607	56	55			
<i>Baden (1890-'91).</i>							
Public	7	2,548	47	40			
Private	23						
<i>Hesse.</i>							
Public	6	2,172	58	42			
Private	39	2,500	138	132			

* Zeitschrift für weibliche Bildung, 1897, p. 93.

Distribution of Schools, Teachers, and Pupils (continued).

	No. of schools.	No. of pupils.	Male teachers.	Female teachers.	Men assistants.	Female assistants.	Female assistants in sewing, etc.
<i>Mecklenburg.</i>							
Public	7	2,053	27	30			
Private	48	4,540		280			
<i>Saxe-Weimar-Eisenach.</i>							
Public	2	529	512	19			
Private	8	573	29	32			
<i>Oldenburg.</i>							
Public	6	1,141	25	24			
Private	8	484		39			
<i>Braunschweig.</i>							
Public	5	1,294	39	39			
Private	7	776	43	59			
<i>Saxe-Mein.-Hildb.</i>							
Private (only).....	6	311	21	19			
<i>Saxe-Altenburg.</i>							
Public	2	262	12	6			
Private	1	124	7	4			
<i>Saxe-Coburg-Gotha.</i>							
Public and private.....	3	484	16	12			
<i>Anhalt.</i>							
Public	4	1,206	34	25			
Private	2	162	9	10			
<i>Schwarzburg-Rudolstadt.</i>							
Public	2	125	9	4			
Private	2	19	2	2			
<i>Schwarzburg-Sondershausen.</i>							
Public	2	261	6	10			
<i>Waldeck and Pyrmont.</i>							
Public	4	132	14	12			
<i>Reuss.</i>							
Public and private.....	2	446	15	8			
<i>Lippe and Schaumburg-L.</i>							
Public and private.....	6	430					
<i>Lübeck.</i>							
Public	1	349	4	8			
Private	10	1,335	75	71			
<i>Bremen.</i>							
Private (only).....	10	2,363	53	123			
<i>Hamburg.</i>							
Public	6	2,244	23	80			
Private	53	6,350	158	441			
<i>Alsace-Lorraine.</i>							
Public	9	1,337	48	53			
Private	55	5,941	124	502			

Lange in Entwicklung und Stand des höheren Mädchenschulwesen in Deutschland. It is only approximately correct, as the reports are from various years. It is incomplete, since the materials necessary for complete tabulation are not accessible. There are so many kinds of girls' higher schools that it is difficult to classify them in any adequate manner. Even the Statistisches Jahrbuch der höheren Schulen Deutschlands fails to do this. In all except Prussia the regular teachers and assistants are enumerated in the same column. A majority of the male teachers are only assistants, while nearly all the women are regular teachers.

4. GIRLS' GYMNASIA.

The great desire of German women to study in the universities has been met by the potent argument that they had no adequate fitting schools to prepare them for the new character of work which they proposed to undertake, even though the university faculties should freely grant them admission. Tradition and popular sentiment were too strong to permit the people even to entertain the idea that girls might go to the boys' gymnasia, and receive the same preparatory instruction as their brothers. It was in response to this pressing demand that the Allgemeine Frauen Verein conceived the idea of opening private Mädchen gymnasia, where young women might supplement the work of the higher girls' schools by taking the languages, mathematics, and history, as well as broadening in other essential lines. With the important cause championed by

Fräulein Helene Lange, of Berlin, who pleaded for a chance to experiment, rather than to settle the question summarily by logic, the women at last succeeded in making a beginning.

A girls' gymnasium, with Fr. Lange as directress, was first opened in Berlin in 1894. Almost contemporaneously one was started in Leipzig, and since that, one each in Karlsruhe and Breslau. One is in process of organization in Bremen, and in several other cities they are contemplated.

The Bremen gymnasium was erected by the city with the intention of having its graduation certificate recognised as a passport to the university. It was opened in October, 1897, under the leadership of Fr. Dr. Plehn.*

The one in Karlsruhe received permission from the Minister of Instruction to have graduates from its school, which was planned similar to the upper real-schools, admitted to the study of natural sciences and mathematics in the university.† Mannheim awaits the outcome of this to determine whether a girls' gymnasium shall be erected there.‡ Baden was reported about to follow the example of other cities,§ and Weimar is considering the matter. The girls' gymnasium in Breslau is to be united with the present girls' higher school. The first six years of the course are to remain unchanged, while during the last three years of the present course Latin will

* Zeitschrift für weibliche Bildung, April, 1897.

† Académische Revue, January, 1896.

‡ Ibid., March, 1897.

§ Ibid., June, 1895.

be taken. In addition, three years, corresponding to Upper Secunda and the two years in Prima of the boys' gymnasium, will be maintained.*

In 1895 the first woman was admitted to the "Reifeprüfung" or final gymnasium examination in Prussia.† In 1896 the first class finished the course with Miss Lange in Berlin. The papers stated that she was entirely successful ("Sie haben damit Beweis ihrer Lernfähigkeit vollgütig erbracht").‡ About the same time one woman took the examination with credit in Düsseldorf.§

The old prejudice is passing away, and women from the best families are taking up in earnest definite courses of study. The daughter of Dr. Bosse, Minister of Instruction, is said to be studying pharmacy. The Countess Helene Posadowsky, daughter of the State Secretary, will this year take the scientific examination for teachers.||

It is probably only a question of time when women will be admitted regularly to the universities and higher seats of learning.

The girls' gymnasium in Leipzig was organized by the Allgemeine deutsche Frauenverein, under whose patronage it is conducted and managed. It was opened at Easter, 1894, under the leadership of Fräulein Dr. K. Windschied, daughter of the late Professor Windschied of the law department of the University of Leipzig. Dr. Windschied was granted

* Zeitschrift für weibliche Bildung, 1896, p. 597.

† Ibid., 1895, p. 364.

‡ Ibid., 1896, p. 191.

§ Ibid., 1896, p. 170.

|| Ibid., April, 1897.

the degree of Doctor of Philosophy at Heidelberg in the fall of 1893.*

The course is one of four years of twenty-four weekly hours of instruction. Pupils may take twelve hours weekly instead, and extend the time twice as long. Students must be at least sixteen years of age, and are admitted only by an entrance examination. All admitted are under obligations to attend at least one full year. The object of the course, as with the other girls' gymnasia, is specifically to prepare young women for entrance upon a course of university study. The subjects of instruction include Latin, Greek, mathematics, German, French, English, history, geography, and natural science. The instruction is all given in the morning hours, from eight to twelve. The tuition is 120 marks per semester, or 240 marks yearly.†

The first year of its establishment there were ten pupils, the oldest of whom was twenty-five years of age. At the beginning of the second year ten joined the first year's class, and two new ones, who had privately prepared themselves, the second year's class. The first report of the director stated that the "pupils had applied themselves with eagerness and industry to their difficult task, but that the severe exertions had had no detrimental influence upon their health." This course, together with what is a prerequisite for admission, is about equivalent to

* Zeitschrift für weibliche Bildung, 1894, p. 21; Deutsche Schulzeitung, November 23, 1893.

† Zeitschrift für weibliche Bildung, 1894, p. 27.

the real-gymnasium courses for boys. The latter contain considerably more higher mathematics and some more science training. The real-gymnasium also has more Latin but no Greek. The girls' gymnasium is not strictly comparable to any of the existing courses for boys, but its aims are most closely allied to the one mentioned. Young women may enter the same university faculties. Below is given the detailed course of the Leipzig girls' gymnasium. Those in other cities are quite similarly planned, so that this may be taken as thoroughly representative of the work pursued and the ends to be attained.

Course in the Girls' Gymnasium, Leipzig.

	I*	II	III	IV	V	VI	VII	VIII	Total.	†
Latin.....	5	5	5	5	5	5	4	4	38	19
Greek...	..	4	4	4	4	4	3	3	26	13
Mathematics.....	4	4	4	4	4	4	4	4	32	16
German.....	3	2	2	2	2	2	2	2	17	8½
French.....	3	2	2	2	2	2	2	2	17	8½
English.....	3	2	2	2	2	2	2	2	17	8½
Geography.....	1	1	1	1	1	1	1	1	8	4
History.....	2	2	2	2	2	2	2	2	16	8
Natural science.....	2	2	..	..	..	..	..	..	4	2
Phys., chem., and min. ..	..	..	2	2	2	2	2	2	12	6
Religion.....	..	..	..	..	..	..	2	2	4	2
	23	24	24	24	24	24	24	24	191	95½

* Semesters, not years. I is the first, VIII the last, semester of the course.

† Total number of weekly hours on year basis.

FIRST YEAR.

Latin. Regular and irregular etymology. Chief rules of syntax. Read in exercise book. In last quarter of year, Cæsar's Gallic War. Read text-books, parts usually taken by Sexta and Quinta.

Greek (begins second semester). Regular etymological forms to the liquid verbs. Translations and readings.

Mathematics. Four fundamental operations in algebra. Equations with one unknown quantity. Begin geometry. Geometric quantities; their origin. Straight lines, angles, triangles, quadrilaterals, circles. Constructions. Analytical methods of solving the construction exercises.

German. Thorough consideration of elementary sounds, etymology, and syntax. Oral and written analysis. Compositions. Lectures by students. Theory of style and structure of poetry. German literature from earliest writing to the middle of the thirteenth century.

French. Review grammatical forms. Exercises to aid in fixing syntactical rules. Translations, dictations. Read some author. Literature from earliest period to the middle of the sixteenth century.

English. Review and extension of etymology and syntax. Dictation, translations. Read some easy author. Literature from the beginning to 1603.

History. Greece. Roman history to the year 476.

Geography. Fundamentals of mathematical geography.

Natural history. Botany: Review systematic botany, and take the most important parts of anatomy and physiology of plants. Zoölogy: Representatives of the most important classes of the animal kingdom.

SECOND YEAR.

Latin. Complete the syntax of the verbs and nouns. Read Cæsar, and an easy work of Cicero. In the last part of the year, introduction into prosody. Selected portions of Ovid's *Metamorphoses*.

Greek. Liquid verbs. Irregular verbs. Syntax of the noun. Chief rules of mode and tense. Read Xenophon's *Anabasis* and Homer's *Odyssey*.

Mathematics. Proportions. Equations of the first degree with several unknown quantities. Powers with positive and negative, integral, and fractional exponents. Imaginaries and complex numbers. Easy quadratic equations with one unknown quantity. Polygonal surfaces. Similarity of triangles. Harmonic points and lines. Constructions. Ratios and measurement of polygons.

German. Connected grammatical and oral use of constructions in connection with the reading. Compositions. Dissertations by students. Literature from 1300 to 1748.

French. Continued exercises in speaking and grammatical rules in connection with the reading of some author. Literature from the middle of the sixteenth century to 1700.

English. Exercises in speaking with reference to certain grammatical rules in connection with the reading of some author. Connected conversations. Literature from 1603 to 1750.

History. Middle ages to the year 1517.

Geography. European states. Non-European geography.

Natural history. Elementary concepts of chemistry. Most important minerals. General properties of matter, magnetism, frictional electricity.

THIRD YEAR.

Latin. Finish etymology and syntax. Review most difficult sections of tense and mode. Consideration of style. Read from Cicero, Livy, Ovid, Virgil.

Greek. Continue tense and mode. Syntax and style considered in connection with the reading. Read Xenophon's *Hellenica*; Lysias. Easy dialogues of Plato; Herodotus; Homer's *Odyssey* and *Iliad*.

Mathematics. Quadratic equations with one or two unknown quantities. Logarithms. Arithmetical series of the first order. Geometric series. Calculation of circles. Plane trigonometry and goniometry. Begin stereometry.

German. Prosody. History of German art. Compositions. Lectures by students. German literature from 1748 to 1832.

French. Continue work of the second year. Literature from 1700 to 1830. Readings.

English. Continue second year's work. Literature from 1750 to 1830. Readings.

History. From the beginning of the Reformation to the death of Frederick I of Prussia (1713).

Geography. Most important portions of physical geography. Thorough consideration of important geographical points and questions of the day, as the Alps, Mediterranean Sea, the German colonies, etc.

Natural science. Physics, galvanic electricity,

heat, mechanics, most important parts of the theory of wave motion.

FOURTH YEAR.

Latin. Reviews. Historical considerations (antiquities, literature, and art history). Read Tacitus and Horace.

Greek. Review grammar. Consider syntax and style in connection with the reading. Read Demosthenes, Plato, Thucydides, Sophocles, Homer's Iliad.

Mathematics. Interest and rent. Binomial theorem with positive integral exponents. Graphic representation of functions.

Stereometry: Synthetic consideration of sections of the sphere. Elements of co-ordinates. (Special consideration of applications to mathematical geography and circular surfaces.) Methods of solving geometric constructions by algebraic analysis. Review and systematizing of mathematics previously considered.

German. Review of previous work. Compositions. Dissertations by students. Elements of psychology and logic. German literature from 1832 to the present. Readings.

French. Translation of a German author into French. Systematic consideration of synonyms. Style. Short dissertations by pupils. Literature from 1830 to the present. Readings.

English. Translation of a German prose work into English. Systematic consideration of synonyms. Style. Short discourses by pupils. Literature from 1830 to the present time.

History. History of the eighteenth century; nineteenth century to 1870-'71.

Natural science. Physics: Acoustics, optics.

Religion. Review doctrines considered in previous training, proverbs, and hymns. Biblical history and geography. Reading and interpretation of New Testament writings. Church history.

A course in pedagogics covering three years may be taken as elective.

5. WOMEN IN THE UNIVERSITIES.

Notwithstanding all the conservatism manifested in this matter of women entering the higher schools of learning in Germany, the most pronounced opponents can scarcely fail to recognise that women will most assuredly soon—and it is only a question of time—have admission at all the highest portals of learning. Without much clamour or demonstration, yet with most powerful and convincing appeals, woman is demanding and securing the right to enjoy all the privileges to be derived from acquaintance with the best thoughts of the world's greatest masters. Unquestionably not a decade of the dawning twentieth century will have passed ere the German university lecture rooms, traditionally barred against the weaker sex, will all have swung wide their doors, and coeducation will be a recognised feature of university life. The German Herren Studenten, at first indignant that woman should dare set foot within the sacred portals of learning, next dazed that she should be so audacious and persistent, will at last yield gracefully, and will finally be ready to pay to

the new woman all that knightly homage that the German student with all his courtly formalities is able to do. They at first dubbed the women "Minerva" or "Valkyre," but were never openly disrespectful.

Most of the German professors believe that the craving of women for university training ought to be satisfied. The older men naturally look askance at any such encroachments upon traditional ways. One says, "To deliver history to women is to declare permanent revolution." There are others who seem to think that the male students will be distracted from doing effective work. A certain professor is said to have stated that "the face of woman is, of all books, that which attracts most and teaches least." Some of the professors stormed blusteringly when the subject was first broached to them. It is reported that Professor von Treitschke ordered the University beadle to lead out in a summary manner a woman who entered his lecture-room without permission; and that Professor Schmidt invoked the aid of the Minister of Instruction against the *Damen-invasion* (invasion of women).*

The new order of things in German universities is commented upon by the *Exefelder Zeitung*, November 10, 1896, in the following manner:†

"Still and unostentatiously, yet full of significance for the future, a new era has this winter broken in upon our Rhenish university (Bonn). As

* Hochschule Nachrichten, December, 1895.

† See *Zeitschrift für weibliche Bildung*, 1896, p. 589.

in so many other occupations of life, the tender hand of woman has knocked on the portals of the temple of sober science. Hence we observe this year women sweeping by us with long feathers and plumes as we go into the halls and lecture rooms. The circle of studies which they will choose is as incalculable as the practical consequences which are to follow. However, it is now safe to assert that it will not be without a certain influence upon that select portion of the youthful students who sit at the feet of the docents upon the same benches with the fair sex. Apart from a certain knightly courtliness, which is peculiar in a remarkable degree to other nations where coeducation exists, doubtless this common striving after higher education will kindle greater eagerness for learning, so as not to remain behind the scientific accomplishments of the women students. For that the women will take study seriously, the *Musensöhne* (students), who at first more or less doubtingly opposed, must very soon become aware of."

That the women will have soon won the battle is not a theory, but a fact, beginnings of which are clearly discernible. At least one half of all the universities at the present time have admitted women to the lecture rooms on conditions more or less satisfactory. These include the largest and most prominent universities. It is inevitable that the time will come—and not long hence—when the remaining universities will admit women, and all will grant privileges satisfactory to the fair aspirants.

Whether it was a foreign woman or a German

woman who first stormed the castle of opposition and succeeded in gaining entrance to a German university, I can not say. It is, however, probable that the example of the achievements of their sisters in America, England, Switzerland, France, Holland, Norway, Sweden, Denmark, and even Russia and Austria, fired the German women with greater determination to conquer the traditional prejudice against the higher education of women. For several years numbers of German women have been resorting to the Swiss universities, where they have been regularly admitted to the same privileges and on the same conditions as men.*

Many also attend the Swiss gymnasia to receive the secondary training which has heretofore been denied them at home. But through the importunities of foreign women and by their own timid supplications for their rights, women have succeeded in initiating the movement toward establishing a new order of things. There are now several gymnasia where girls may secure preparatory training necessary to university study, and, as above mentioned, about one half of the universities grant certain privileges of instruction, while others (see below) have surrendered tradition completely, and grant admission and the full privileges on the same conditions as to men.

But, as in all European countries, conservatism

* Basel has but recently admitted women, and only as an experiment; but in the four principal universities, Berne, Geneva, Zurich, and Neuchâtel, there is no distinction in the laws between men and women.

is exceedingly deep-rooted, and it is only after long periods of struggle that they will be able to break the bonds of tradition that have held them so long. It will take long and earnest endeavours to bring Germany into line with those countries that have such a start in the race.*

The existing conditions with regard to the admission of women to the universities is given here in detail for each of the universities that have admitted them :

Berlin. Women are admitted (since 1895) only as *Hörerinnen* (hearers), and have no academical status; their names do not even appear in the personal register; they possess no *Collegienbuch*,† and are usually excluded from seminars and other special work. They are not eligible to the degrees granted, but may only profit as much as they can by listening to the lectures. However, all who are admitted as *Hörerinnen* or *Hospitantinnen* must go through much formality to secure even this small concession. First, permission must be secured from the *Minister der geistlichen Unterrichts*, etc.; second, the rector of the university must give his consent; third, the professor or docent must be consulted,

* At the end of section 6 is exhibited in brief comparative outlines the position of women in education in the principal countries of the world.

† A book possessed by every matriculated student, in which a record of the lectures, the receipt from the questor and from the professor under whom the lectures are taken. For those who do not receive a degree this is the only evidence of work taken. The book has a greater traditional than real significance.

and if he is not an opponent of the *Frauenfrage*, final permission is obtained to hear the respective lectures. Although no *Collegienbuch* is granted them, fees for lectures are not omitted. Without due permission they are even excluded from the public lectures. Those who wish to be admitted as hearers (*Hörerinnen*), and not as visitors (*Hospitantinnen*), must pass a preliminary examination, no matter what their qualifications are, and even though they possess a diploma from a gymnasium. This causes a good deal of dissatisfaction, because they say that all men from foreign countries who have permission to attend in their home universities receive approval of attendance here. This, they claim, ought not to be, in view of the variety of conditions imposed upon candidates for entrance to American universities. Foreigners even take degrees in the medical faculty without having received classical preliminary training, and this of all things is viewed with disfavour with reference to German candidates for the medical profession.

It is impossible to determine the number of women in the German universities by consulting the personal *Verzeichnisse* (registers) of the several institutions, since their names do not appear as regularly matriculated students; and among the number of non-matriculated students given there are many men (middle-aged men, mainly teachers, who have not secured secondary-school diplomas). There are probably one hundred and twenty-five to one hundred and fifty women in all the universities, Berlin alone having sixty *Zuhörerinnen* in one semester.

Recently there have been several in the University of Leipzig. Among all the lectures I attended in the philosophical faculty, and one in the medical faculty, I do not remember one which had not from one to eight women among the hearers. The greatest number are probably in the psychological and philosophical lecture rooms, though the philological lectures count several women as students. The majority of these are Americans, but there are some Germans, Russians, Poles, and Roumanians. The men sometimes look askance at them, and exchange knowing looks among themselves, but the women proceed unmindfully, and act as if they had always belonged there and been allowed there.

Although the subject of social conditions enters largely into the question of admitting women into the universities of Germany, and not a few conservatives combat them on the grounds of mental incapacity, and still others, alarmists, upon the hypothesis that woman's womanliness is endangered by cultivation of her higher mental faculties, yet the *Regierungs Kommission* (government commission) explain that the royal Government is not against the admission of women to the universities; the question, in their estimation, is not within the province of the educational commission to dispose of; there is a present lack of funds for any such measures, and all efforts to change the existing conditions should be directed toward the royal *Landesbehörden* (department of finance) for adjustment.*

* Hochschule Nachrichten, May, 1896.

In October, 1896, there were forty women in Berlin University, all, with one exception, as hearers. This one was regularly matriculated in the law faculty. It is thought that they will soon be admitted to the medical, dental, and pharmacy departments. During the same year one woman was even admitted to the lectures in the agricultural department. A daughter of the Minister of Education, Dr. Bosse, is taking the gymnasial course preparatory to becoming an apothecary. Frau Dr. Lucie Messner, of Munich, has given to the managers of the Berlin gymnasium for women 20,000 marks, the interest of which is to serve as stipendia for women to study in the university.*

Bonn admits women as visitors, in each case requiring evidence of adequate preparation, and permission from the Kultus Minister, the rector of the university, and the professor with whom the work is contemplated. The first one was admitted in the autumn of 1896.†

Breslau, in addition to admitting women as hearers on the same conditions as in Berlin, has sprung beyond all limits prescribed by tradition, and has a woman assistant in the medical faculty.‡ More than that, she is a foreigner, an American, Dr. Tillie Tiegel, of Illinois. Her work now lies in the Dermato-

* See Hochschule Nachrichten, August, October, 1895, April, October, 1896, February, March, 1897.

† Ibid., August, September, 1896; Zeitschrift für weibliche Bildung, 1896, p. 427.

‡ Hochschule Nachrichten, March, 1897; Akademische Revue, March, 1897.

logical Institute, in the clinic for skin diseases and diseases of women.

Freiburg has had some women students, and in 1895 granted to Miss Blickworth of Cleveland, Ohio, the degree of Ph. D. in zoölogy. In the faculty vote there was only one dissenting voice.*

Göttingen is quite a favourite place for women, especially foreigners from America and England. In the winter semester, 1895-'96, there were thirty-one women reported in the various faculties, one being in the medical and the rest mainly in the mathematical, natural science, and modern language departments. As early as 1787 Dorothea Schloze was granted the doctor's degree, her dissertation being upon a mathematical subject. In 1874 two women were honoured with degrees, and after that no more until recently. In June, 1895, Miss Grace Chisholm, of London, carried away a doctor's diploma, having passed the examinations, after writing a thesis in mathematics on *Gruppentheoretische Untersuchungen über sphärische Trigonometrie*.†

Halle took the lead in admitting women to the medical faculty. They even exhibited some degree of pride in announcing (November, 1896) that three graduates of the girls' gymnasium in Berlin, who had been denied entrance to the Berlin University, were admitted to all courses of medical lectures in Halle. They were even admitted to the dissecting rooms and laboratories, the very places where the other

* See Hochschule Nachrichten, August, 1895.

† Ibid., August, December, 1895.

universities objected most to their attending. Berlin especially denied women admission to the medical faculty and to the anatomical lectures and demonstrations.* During 1896-'97 there were nine women matriculated at Halle, and the faculty even put themselves on record with the Breslau faculty by selecting Fräulein M. Gräfin v. Linden as assistant in the zoölogical institute.†

Heidelberg was the first university to grant, in recent times, the degree of Ph. D. to women. Göttingen had granted the degree for the last time in 1874 (see Göttingen). On February 18, 1894, Fräulein Kathie Windschied of Leipzig, daughter of the renowned professor of law in the latter university, was awarded the degree for the successful completion of a thesis and an examination in modern languages, her dissertation being a treatise upon Early English Pastoral Poetry.

In 1895 Fräulein Mary Gernet secured a degree in mathematics, her inaugural dissertation being upon Reduction of Hyperelliptic Integrals through Rational Substitution.

It was reported from there in 1895 that, "as in other German universities the question of women studying in the universities has also found root here."‡ In March, 1896, Misses Gebesen and Morrill secured degrees from this university also.

Jena has recently swung into line, and now all

* Hochschule Nachrichten, November, December, 1896; Akademische Revue, December, 1896.

† Ibid.

‡ Hochschule Nachrichten, August, 1895, March, 1896.

courses of lectures and degrees are open to women on the same conditions as to men. The vote, taken in March, 1897, passed the faculty without a single dissenting voice.*

The technical high schools (which are to all intents and purposes universities) in Munich and Darmstadt have also admitted women to the lectures. The German university at Vienna has begun to admit women, and the first ones received the degree of Doctor of Medicine in April, 1897. Berne, Switzerland, granted to eight women, in 1896, the degree in medicine, and to one in philosophy.†

6. CONTINUATION SCHOOLS FOR TEACHERS.

(*Fortbildungsschulen.*)

In addition to the concession to women in the matter of entrance to the general courses of the universities, work of a professional nature has been offered them in several universities. This arose out of a growing demand made by women upon the educational ministerium for some means of preparing themselves to occupy positions equal to men in the secondary schools, especially in the schools for girls, but also in the boys' schools.

Many of these courses, following the lead of American universities, are summer school courses,

* Akademische Revue, March, 1897; also Hochschule Nachrichten, same date.

† Akademische Monatshefte, December, 1896; Hochschule Nachrichten, December, 1896, April, 1897.

but several universities are now offering special courses for women, which extend throughout the entire university year. A specimen of the latter type of course offered at Göttingen is appended below.

Continuation or *Fortbildungs* course for women teachers in Göttingen as announced for the year 1896-'97 : *

1. Religion, 6 hours. (a) S.† Church history: From the Reformation to the nineteenth century. W. Church history during the nineteenth century. (b) Systems of theology: S. Chief questions of dogmas. W. Fundamental problems of ethics. (c) New Testament exegesis: S. Romans; selected portions of the epistles of Paul. W. Acts of the Apostles. Read selected parts of John's Gospel.

2. History of philosophy, 2 hours. S. Prominent followers of Platonic philosophy. W. Aristotle and Kant.

3. Pedagogy to alternate with philosophy; first course in 1897-'98.

4. German, 6 hours. (a) Historical grammar: S. Theories of sounds and inflections of Gothic and Old High German. Interpretation of Gothic and Old High German texts. W. Middle High German: Etymology, readings, and consideration of literary productions. Prosody. (b) Literature: S. Literature of the seventeenth and eighteenth centuries. Schiller's dramatic delineations in seminary. W.

* Zeitschrift für weibliche Bildung, 1896, p. 156.

† "S." and "W." mean summer semester and winter semester. *

Literature of the nineteenth century. Goethe's early poems in seminary.

5. French, 6 hours. (*a*) Historical grammar and ancient literature: S. Fundamentals of phonetics and pronunciation of French. Didactic and lyric poems of Old French literature in connection with reading and interpretation of Old French texts. W. Historical syntax. Drama and prose of Old French literature. Interpretation of Old French texts. (*b*) Modern French language and literature: S. Recent literature, from 1850 to the present. Readings and written exercises. Translations. W. History of literature of the seventeenth century. Readings and written exercises.

6. English, 6 hours. (*a*) Historical grammar and older literature: S. Introduction to Old and Middle English. Interpretation of Middle English texts. W. Introduction to phonetics. Textual interpretation. Exercises and reviews of Old and Middle English. (*b*) Theory of sound and inflections of Gothic, Old, and Middle High German. (This especially for those who do not elect German.) (*c*) Modern English language and literature: S. Literature of the first half of the nineteenth century. W. Same continued. Prose readings and written exercises. Translations.

7. History, 8 hours. (*a*) History of the middle ages and of modern times: S. From the Westphalian Peace to the French Revolution. W. Middle ages. (*b*) Historical exercises. (*c*) Ancient history: S. Civilization during the time of the Roman Empire. W. Civilization of Oriental peoples and the Greeks to the Persian wars.

8. Geography, 4 hours. To be more definitely determined after candidates have matriculated.

9. Natural science, 6 to 8 hours. (a) Botany: S. Systematic botany of flowering plants and biology of the same (*Blütenbiologie*). Plant geography. W. Elements of general botany. Microscopy of the organs of higher plants. (b) Experimental physics: S. Optics. W. Magnetism and electricity. (c) Elements of chemistry.

The students in the Göttingen course are divided into two classes, (a) co-workers (*Mitarbeiterinnen*) and (b) listeners (*Anhörende*). The first comprises all those who have already passed the state examination for teachers. Only the first class are permitted to take the final examinations of the course, which is of two years' duration. The course is limited to the subjects taught in the girls' higher schools. The diploma given at the close of the course for its successful completion is not recognised as a teacher's certificate, nor has it the value of a degree. The course is not an end, but a means to an end. It gives unqualified admission to the scientific examination for teachers, and the training is of a character directly preparatory to the latter. Since 1894 only have women been allowed to take the scientific examination securing them the rank of head teachers (*Oberlehrerinnen*) and the right to become directors of schools. In case they have taken the Göttingen or Victoria Lyceum course, only two years' experience in Prussian schools is required; all others must have had at least five years of service.* Since October 1, 1897, all women teachers

of whatever rank must be at least nineteen years of age.

At the beginning of the year 1897 a class of twelve women successfully passed the examination in the Göttingen course. On June 29, 1895,* the first examination (*Oberlehrerinnen Prüfung*) of women for the position of head teacher took place. Five of the eight candidates were successful. Of these, four had received preparation at Göttingen and one in the Victoria Lyceum, Berlin. The three who failed were prepared through private instruction.

The examination is conducted quite similarly to that given to men. The examination is to be passed before a commission named by the Minister of Instruction. All candidates are examined in two subjects, chosen from each of the following groups: (a) Religion, German, French, English; (b) history, geography, mathematics, natural science. The examination is partly oral and partly written, the written examination consisting of a thesis in one of the subjects selected. Six weeks, with a possible extension of four weeks, are given for its preparation. The oral examination is to be passed before the entire commission. Both subjects must be completed within a year, and in case of failure they may be but once repeated.†

This whole movement, including the permission of women to become head teachers and directors, and the securing of continuation courses, as well as

* Zeitschrift für weibliche Bildung, 1895, p. 400.

† Ibid., 1894, p. 341 *et seq.*

girls' gymnasia, owes much of its success to the active efforts of Miss Lange. She, of course, is not the sole cause of it all, but it may be said justly that she has been the power that has united the scattered forces tending toward innovation. The ultimate cause is traceable to the general tide of sentiment leading away from aristocratic tendencies toward those more democratic. But, like all true reformers, she has had the insight to know when and how to act after opportunity was ripe. She, with four other Berlin women, petitioned* the Minister of Instruction in 1893 to have women allowed a greater share in the instruction of girls, especially in the middle and higher classes. They desired particularly to have the German and religious instruction placed in the hands of women. Those studies that contribute most to shape the sentiments in morals and religion they felt could be best intrusted to those of the same sex, whose modes of thinking and whose instincts would make them more sympathetic with the impulsiveness and instability of budding womanhood. The petition was opposed in an energetic manner and refused, however, chiefly on the ground of the present lack of properly prepared teachers. Since that, the women have won a large part of what they sought, and the courses offered by the Victoria Lyceum and the Göttingen University have opened the way for the initiatory supply of competent teachers. Miss Lange and her

* Unsere Lehrerinnen, Zeitschrift f. w. Bildung, 1895, p. 740 ff., article by Auguste Sprengel.

co-workers demanded the employment of more women in the schools upon moral and ethical grounds, believing that only women should be instructors of girls in the above-named subjects. Moreover, she claims that throughout all periods of a girl's life a part, at least, of all her instruction should be in the hands of women.

The girls' schools had not only suffered from a lack of female instructional force, but they had been obliged to employ the less capable men teachers. Not being recognised officially as secondary schools, the best prepared candidates were not required and, of course, not secured. A large majority of the teachers were from the normal schools instead of from the universities—that is, their teachers were on the same plane with the teachers of the people's schools. In many respects they were not so highly regarded. They could not even receive the title of head teacher (*Oberlehrer*). Since September 28, 1894,* however, they are recognised as head teachers in Prussia, and may receive that title as soon as that position in school is reached. Now, the directors, instructors in religion, foreign languages, and ethical subjects, in so far as these do not come within the province of women, are to be in charge of men who have passed examinations for higher teaching positions. Thus, there is a distinct gain in the quality of the female teaching force to be employed subsequently, although the female sex has not secured so large a representation as they desired. With their

* Centralblatt, 1894, p. 743.

better preparation assured, however, their future brightens.

The Minister of Instruction long recognised that the state hitherto had done too little for girls' instruction, which is explained by the fact that the higher education of boys is deemed necessary for their entrance to higher state positions, while girls are by custom excluded from nearly all state positions except teaching. He further recognises that girls' education is important for the state in many directions. However, many, Dr. Bosse included, maintain that the interests of the greater number are not to be overlooked. Only a comparatively few girls are to receive higher education or to enter technical pursuits, while the masses find their life callings in household pursuits. Hence it is deemed best to shape education to the needs of the many.

7. SALARIES OF WOMEN TEACHERS.

Women receive much lower salaries than men. However, there is an effort being made to equalize more nearly the salaries of the two sexes for the same quality and amount of work. That is, of course, a difficult matter to adjust, even though it were arranged so that there should be no discrimination against women when they perform the same amount of work as men; quantities could be estimated in units of time actually spent in instruction, but the amount of work really accomplished is difficult to estimate. Still harder is it to compare in tangible form the quality of intellectual accomplishments. One class of work may be better or poorer than

another, but it is difficult to establish a scale of wages that shall represent equable compensation therefor.

The main arguments proposed in Germany are that men have to provide for the support of families, while women seldom have this to think of. Against this is then urged that men with families ought according to such reasoning to be paid more for given service than bachelors or men without children.

It is urged by opponents of the *Emancipation der Frauen* that the province of women lies within the domestic circle, and that those who choose occupations outside of household duties are usurping the rightful callings of men. Those, at least, who are not driven by necessity to choose remunerative work ought to leave the field clear for men. A woman whose family is in moderate circumstances and whose health is such that she may look forward to marriage ought not to take away from men the means of earning a livelihood. Such women, they urge from social considerations, ought to leave the bread-winning avenues free to men, and to content themselves with necessary preparation for wise management of a household and intelligent and judicious motherhood. A prominent teacher in a girls' higher school related to the writer an instance of the daughter of a school director, a man earning 6,000 marks a year, who entered the field of teaching, thereby, as he considered, taking the bread away from some worthy man who needed the money to bring up a family. He considered it contrary to the social interests of the country.

From the social standpoint, also, there comes an answer to the above arguments. Whatever may be the natural end to be attained by every woman, which is assumed to be that of marriage and the care of a family, the social conditions are now such that it is unattainable. Statistics show that in 1890 of all women of marriageable age (twenty-one to fifty) 33.7 per cent in Germany were single—that is, unmarried or widowed, and largely dependent upon themselves for the means of support. In the upper circles of society marriages are less frequent than in the lower. A woman in the latter stratum can help earn the living for a family by working in factories or in the fields. In the upper classes no means of earning is possible, and hence fewer men marry, because, alone, some earn inadequate support for a wife and family. The proportion of single women among the upper classes is said to be as high as fifty per cent of the marriageable.* This makes the question one of close connection with that of pay of women school teachers, since it is from families of the better classes, who are able to send their girls to the higher schools, and hence from this stratum of society, that the majority of women teachers come.

Saxony stands alone in placing women and men on the same salary list in the people's schools. In their statutes (6) they explained that "Unter Lehrer im Sinne dieses Gesetzes sind auch die Lehrerinnen zu verstehen." The Prussian law of 1885 prescribes salaries of women equal to from seventy-five to eighty

* Cf. Zeitschrift für weibliche Bildung, Frauenberuf in Diakonie von Dr. C. Wunder; also see Paulsen's Ethik.

per cent of those received by men. According to Frä. Helene Lange,* however, the salaries of women in the city people's schools are 69.5 per cent of men's; in the girls' middle schools, 53.1 per cent; and in the girls' higher schools about 52.2 per cent. The only compensation for the discrepancy is offered in the smaller number of hours required of women. In Berlin and Hanover, however, where the maximum salary of women is 200 to 250 marks per year less than that of men of the same training—i. e., seminary training—there is not to be found a corresponding difference in hours of work.†

The question of woman's pay and woman's work is one which is pertinent in America as well as in Germany. There are few, however, in America who regard woman as a usurper in the field of teaching. So few men care to fit themselves for the work with its small compensation that the field is practically free to women in all but the higher ranks. Although there is nearly as great disparity between men's and women's wages in America as in Germany, yet the absolute compensation awarded to women who are competent and thoroughly trained is much better in America than in Germany.

* Rein's Encyklopädisches Handbuch d. Pädagogik.

† Where the men have received university training and the women only seminary (normal school), there is justice in the discrepancy. Few women, however, could hope to receive as much as men even though equal salaries were given for equal training, since the universities are practically closed to women; first, because the universities are opposed to their entrance, and, second, because they have no means of preparing for the universities.

Capable women can earn salaries in America such as are paid only to men in Germany who have undergone long courses of training and served long periods in the teaching ranks. Both women and men are much better paid in America than for equal service in Germany. Many, if not most, Germans themselves recognise this fact. The words of Frl. Helene Lange confirm this view.*

Below are enumerated the salaries paid to women in the various grades of schools in some of the states and a few representative cities. The list is intended to be illustrative rather than exhaustive. The figures mentioned in connection with the states show the salary as prescribed by law. Many of the cities have permission to enact their own regulations in this regard as in others. Hamburg, Bremen, and Lübeck are free cities, and act as independent states.

Baden.

	Beginning salary.	After 3 yrs.	After 6 yrs.	After 9 yrs.	After 12 yrs.	Rent.
Head teachers, people's schools.....	1,100†	1,200	1,300	1,400	1,500	115-260
Under teachers, people's schools.....	800 to 900					

* "Weit besser wird freilich die deutsche Lehrerin, falls sie wirklich etwas versteht, im Auslande bezahlt, besonders in England und Amerika. Spricht sie die modernen Fremdsprachen geläufig, hat sie tüchtige Leistungen in Malen und Musik aufzuweisen, ist sie im Stande, in Latein und Mathematik zu unterrichten, so kann sie bei freier Station ein Gehalt bis zu 2,700 und 3,000 Mark beziehen" (Rein's Encyklopädisches Handbuch der Pädagogik, i, p. 373).

† The amounts given are in marks.

Saxony.

	Beginning salary.	After 5 yrs.	After 10 yrs.	After 15 yrs.	After 20 yrs.	After 25 yrs.	After 30 yrs.
People's schools, 40 pupils in class.....	1,000 ⁺	1,075	1,150	1,225	1,300	1,375	1,450
People's schools, more than 40 pupils.....	1,000	1,200	1,350	1,500	1,600	1,700	1,800

Hesse.

People's schools, ordinary teachers.....	900-1,200 and rent.
People's schools, ordinary teachers, large cities.....	1,200-1,400 “
Darmstadt people's schools, ordinary teachers.....	1,200-1,750 “
Mainz people's schools, ordinary teachers.....	1,200-1,600 “
Worms people's schools, ordinary teachers.....	1,200-1,600 “
Giessen people's schools, ordinary teachers.....	1,200-1,600 “
Bingen people's schools, ordinary teachers.....	1,000-1,400 “
In girls' higher schools	1,400-2,400 “

Mecklenburg.

In girls' higher schools	900-1,500 and rent.
In people's schools.....	600-1,200 “

Saxe-Weimar.

In people's schools.....	900-1,400 and rent.
In people's schools (cities).....	1,000-1,400 “

Alsace-Lorraine.

People's schools.....	720-900	Girls' higher schools.....	1,000-1,800
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Hamburg.

	Beginning salary.	After 3 yrs.	After 6 yrs.	After 8 yrs.	After 10 yrs.	Rent.
Ordinary teachers, people's schools.....	1,200	1,400	1,600	1,800	2,000	Allowed.
Assistant teachers, people's schools.....	1,000					
Head teachers, girls' higher schools.....	1,900	2,100	2,300	2,500	2,700	Allowed.
Ordinary teachers, girls' higher schools.....	1,400	1,600	1,800	2,000	Allowed.

Bremen.

Ordinary teachers, people's schools.....	1,000-1,500 and rent.
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* The amounts given are in marks.

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Karlsruhe.

Ordinary teachers, people's schools..... 1,500-1,800 and rent.

Dresden.

Ordinary teachers, girls' higher schools..... 1,600-2,400 and rent.
Assistant teachers, girls' higher schools..... 1,400 and rent.

Leipzig.

Ordinary teachers, girls' higher schools..... 1,350-2,400 and rent.
Assistant teachers, girls' higher schools..... 1,200 and rent.

Lübeck.

	Beginning salary.	After 3 yrs.	After 6 yrs.	After 9 yrs.	After 12 yrs.	After 15 yrs.	After 18 yrs.	After 21 yrs.	After 24 yrs.
People's schools, ordinary teachers.....	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400
Girls' intermediate schools, ordinary teachers.....	1,200-1,600								

NOTE.—See Rein's *Encyklopädisches Handbuch der Pädagogik*, i, article *Besoldung der Lehrerin*.

Table showing Salaries of Women Teachers in Representative States and Cities.

	PEOPLE'S SCHOOLS.		Average salary girls' higher schools.	Average income girls' intermediate schools.	Average income mixed intermediate schools.
	Average yearly salary.	Entire income, including perquisites			
East Prussia.....	670*	936	1,125	1,067	750
West Prussia.....	715	1,010	1,256	1,062	880
Berlin.....	1,220	1,538	2,001		
Brandenburg.....	801	1,089	1,313	1,223	1,285
Pommern.....	669	992	1,275	1,159	1,166
Posen.....	727	1,026	1,253	1,193	1,350
Schlesien.....	916	1,160	1,273	1,395	1,275
Saxon Prussia.....	788	1,050	1,195	1,126	979
Schleswig-Holstein.....	782	967	1,304	1,152	....
Hannover.....	732	981	1,202	1,230	1,045
Westphalia.....	899	1,146	1,396	1,175	1,200
Hesse-Nassau.....	903	1,197	1,782	1,501	1,850
Rheinland.....	907	1,161	1,637	1,590	
Hohenzollern.....	766	934			
Average for Prussia:					
(a) In cities.....	979	1,261 }	1,433	1,257	1,131
(b) In country.....	793	1,171 }			
Av. for men in same positions.					
(a) Cities.....	1,359	1,814 }	2,854	2,364	1,991
(b) Country.....	911	1,271 }			

* The amounts given are in marks.

APPENDIX.

A Comparative Table showing Educational Status of Women in all the Principal Civilized Countries.

AMERICA.	ENGLAND.	FRANCE.	SWITZERLAND.
<p>All elementary schools free, coeducational. Secondary schools the same. Teachers, women in majority. Heads of schools usually men. All State universities west of Alleghany Mountains and north of Mason and Dixon's line coeducational. Most colleges in same area, also universities and colleges of South, coeducational. Universities and colleges in Eastern and middle Atlantic States still conservative, yet gradually yielding. Several universities and colleges exclusively for women in this section; a few in all other sections. In most institutions all college degrees conferred upon women under same conditions as men; degrees confer equal privileges.</p>	<p>Elementary and secondary public instruction coeducational. Many separate secondary schools for boys and girls. Men and women teachers. Women in public schools and in girls' schools in the majority. Oxford and Cambridge conservative. "As regards lectures, tutorial help, etc., women have little or nothing to desire." They receive no degree—only a diploma. Other principal colleges grant them degrees and other privileges same as men—e. g., London, Victoria (including Manchester, Leeds, Liverpool); Durham, Wales (including Bangor, Cardiff, Aberystwith). "Women have taken same studies as men at Cambridge for twenty years, and have suffered no injury to their physique."</p>	<p>Primary schools open to both sexes. Lycées, or secondary schools, practically open to girls. The girls may take the same leaving examination (baccalaureate) which admits to the universities (since 1872). Several girls' lycées already in operation, 26 cities building them, and 38 other cities negotiating for them. All university courses and degrees practically open to women. Few women take highest degrees, but many study in the universities.</p>	<p>Elementary schools coeducational. Girls' and boys' gymnasia separate. In advanced elementary schools, 12,191 pupils; in the continuation schools, 3,283 pupils; in the normal schools, 708 women. About 33 per cent of all teachers are women.</p>
		<p>Universities (Basel excepted) have all been opened to women for twenty years. Swiss universities attract large numbers of foreign women, principally Russians. Two hundred and twenty-six women in Swiss universities in 1891-'92; much greater number now.</p>	<p>Universities (Basel excepted) have all been opened to women for twenty years. Swiss universities attract large numbers of foreign women, principally Russians. Two hundred and twenty-six women in Swiss universities in 1891-'92; much greater number now.</p>
		<p>BELGIUM status of women about the same as in France.</p>	<p>Switzerland is probably the most progressive of European countries in its public education. Swiss women do not avail themselves fully of all the advantages. More foreign women, especially Russians.</p>

A Comparative Table showing the Status of Women (continued).

GERMANY.	HOLLAND.	AUSTRIA.	RUSSIA.
<p>Bürgerschulen, or people's elementary schools, public, open to both sexes; not free. Boys and girls instructed separately, except in primary classes. Secondary schools for girls mostly private, several private, though none free. Courses of nine or ten years, beginning with fourth school year. Course designed as a culture course—one or two modern foreign languages—does not prepare for university study. Only four university preparatory schools or girls' gymnasia at present (Leipzig, Karlsruhe, Bremen, Berlin). Women admitted to about ten universities to hear lectures, if special permission is received. Göttingen, Halle, Jena, and Heidelberg grant them degrees. (This is, however, in the discretion of the faculty in all universities. Government permission to enter conveys no compulsion upon the faculty to grant degrees.) Many study in Swiss universities.</p>	<p>Greater number of elementary schools admit both sexes on equal terms—i. e., from six to twelve years. There are 12 middle schools for girls only, and 371 girls were in the 60 middle schools for boys in 1884. Each commune decides whether girls may be admitted to the gymnasia or lycées. Two Catholic communes only refused. Several girls in gymnasia in Amsterdam and Rotterdam. All four universities open to women. In 1893-'94 there were 114 women enrolled. Several had taken degrees. May enter for any and all degrees.</p>	<p>People's elementary schools public, open to both sexes, not free. Boys and girls instructed separately as in Germany. Secondary education of girls as in Germany. One girls' gymnasium at Prague (1890). Empersays that universities may be opened as soon as girls are prepared to enter. On strength of this a vigorous movement has been put on foot to prepare girls. Women admitted to Prague University as "ausserordentliche Zuhörerinnen," but this gives no academic privileges for degrees, etc. Many study in Switzerland.</p>	<p>"In 1891-'92 there were 455,167 girls in elementary schools, 89,473 in secondary schools (including girls' gymnasia), 3,832 in professional schools, 400 in university colleges." In secondary schools they study languages, mathematics, sciences, and sometimes pedagogy. Completion of the course entitles them to diplomas as teachers. Many attend foreign, especially Swiss, universities. "Russian women have gone the farthest in emancipation, have acquired the most brilliant reputation in matters of the intellect, and are most daring in enterprise of all nations. American women may have accomplished more, but they do not labour under the same difficulties as the Russians."</p>

A Comparative Table showing the Status of Women (continued).

NORWAY.	SWEDEN.	DENMARK.	FINLAND.
<p>Elementary education coeducational. Secondary schools separate. Girls' secondary schools mainly private. Of these there are 18, with 3,157 pupils. Women permitted to teach in lower grades; admitted to graduation examinations from the gymnasias, also to university privileges (1884), such as taking degrees, receiving scholarships, etc. Are eligible to positions on school committees. Several higher normal schools for women.</p>	<p>Common-school education has always been the same for both sexes. Parents may send girls to higher schools for girls; 124 of these. Connected with these are continuation schools, where girls prepare for the university or higher training college for teachers. There are also people's high schools for girls, similar to gymnasias, giving a general education and training in manual work. All departments of universities, except the theological, open to women; they may study here and take degrees on same conditions as men.</p>	<p>Common schools open to girls and boys alike; higher schools, as a rule, reserved for boys alone. Women employed very largely in teaching. Admitted to University of Copenhagen (since 1875). Theological faculty has special examination for women. Practically all positions are open to women, and many women are found in all branches of business and in the professions.</p>	<p>Women have university privileges equal to those of men. Since 1883 there have been coeducational fitting schools. In 1894 there were 73 women in the university.</p>

A Comparative Table showing the Status of Women (continued).

SPAIN.	GREECE.	ITALY.	SPANISH AMERICA.
Elementary and secondary instruction of boys and girls separate, mostly private. Women may enter the universities as hearers and, by special permission, matriculate. Twenty in universities in 1892, mostly in medicine and pharmacy. Education at a general low ebb.	Elementary schools coeducational; number of girls only about one quarter the number of boys. Secondary instruction maintained by private schools and societies. These have educated many thousands. Courses of study six years after three years in the elementary schools. "The result is that Greek women get a very fair education, and can get a very good one." University at Athens open to women since 1890. Many female teachers.	Lowest schools and kindergartens taught by women. Many women in normal schools. Several colleges for women. "The culture of Italian women, as noted in the attendance at the normal schools, has progressed everywhere. As regards a desire for knowledge among Italian women, it is reduced to the smallest proportions. Those in the lowest station of life have become the only class who study at all, and these most-ly obtain positions as teachers." A lack of girls' colleges. Any woman may enter the universities; many study medicine.	Actual accomplishments have been meagre, but great eagerness is being shown. Majority of governments striving for and tending toward coeducation, at least in primary schools and universities. The middle schools, though in part coeducational, still are largely separate for the sexes.
			PORTUGAL. — Elementary education of girls mostly private. Girls may and do enter the lyceums and colleges for boys.

NOTE.—This table is compiled mainly from the article by Miss Frances Graham French, Report of Commissioner of Education, 1894-'95, vol. i.

8. THE HIGHER EDUCATION OF WOMEN
CONSIDERED.

That the German views concerning the education of women differ very radically from those of most Americans is well known. In Germany it has been held by the majority that woman's activities ought to be confined to household arts and the duties connected with rearing a family. Besides this province, when circumstances are straitened, she ought to be the helper of her husband in agricultural or other industrial pursuits. This is not a theory alone, but hundreds of thousands of women daily perform heavy manual labour such as falls only to men in America, thus following the path which custom and popular opinion has marked out for them. By the multitudes women are not considered capable of receiving higher education of the same quality and amount as men. Some who hold no doubt of her educability, however, believe that she would be transgressing her naturally foreordained functions by receiving higher education. Helene Lange says:* "We frequently meet in foreign and home journals the statement that the German is the only and the last great nation of culture which leaves its women under the oppression of the Middle Age fetters, keeping closed against them the institutions of higher learning—that is, the requisites of every higher professional activity—and thus effectually preventing the solution of the

* Higher Education of Women in Europe, p. 1. Translated by L. R. Klemm.

burning question, which is only possible through intellectual emancipation."

Thus within the last decade or two a few champions of the "woman's cause" have appeared in Germany who insist that all avenues of intellectual pursuits should be open without restriction to women who are inclined to enter them. Moreover, they should be aided and encouraged in accomplishing their end. Better provisions for instruction are demanded for them, that they may be enabled to grapple with the newly arising conditions which a changing industrial world is forcing upon them. It is these very industrial changes which are the important factors in modifying the educational status of women. They are of more force than any sentiment born even of custom or tradition. They are the forces which are reversing the sentiments based on mediæval tradition. Changing industrial conditions are rapidly and surely forcing women, even in the face of a strong and deep-rooted prejudice, to become educated as a means of livelihood. In the days when women spun all the yarn and made all articles of wearing apparel by hand in the home women had sufficient work to keep them employed, and they could earn enough to support themselves. But with the introduction of machinery many of the former channels of domestic labour have been closed. Women have found it necessary to seek a means of subsistence elsewhere, and many of the newer occupations have necessitated better educational preparation. A few have found occupations as teachers in the lower classes of the public schools, some in the girls' higher schools, and

still others as private teachers in families. This last occupation is being displaced, however, by the public and private girls' high schools that are every year becoming more numerous. Because of the changed industrial conditions, also, fewer women marry than formerly. Competition in the business world is so sharp that fewer men can support wives, and also because the household duties have become so much diminished that a man feels he has less need of a wife. In the lower and middle classes, if the women marry, they must necessarily work in the factories or in some business as clerks, or tend small shops of their own.* Thus the education of women is being forced upon them from a practical subsistence standpoint, and the demand is being supplied by education of a utilitarian character largely. These changing sentiments and changing industrial conditions have within the last ten years brought the so-called *Frauenfrage* into considerable prominence in Germany.

A few women, prominent among whom is Fräulein Helene Lange of Berlin, who are anxious to promote the best interests of women in Germany, have spared no effort to bring legislation and public sympathy to contribute to the better establishment and maintenance of all classes of higher schools for girls. They are not seeking to elevate from present conditions only, by educating from a utilitarian point of view, but they maintain that woman, if given the chance, would prove herself capable of receiving the

* Paulsen's *Ethik*, and Berlin *höhere Mädchenschule in Zeitschrift für weibliche Bildung*.

same kind of education and in the same degree as man.

The educational periodical literature, as well as the daily press, is continually mooting the *Frauenfrage* both *pro* and *con*. The discussions in many respects remind one of the arguments to be found in periodical literature in America in the middle of the present century, when the higher education of women was a debated question. In America the question has been settled; there are few who doubt that woman may occupy positions in any of the learned callings with credit to herself and to the calling. The high schools, colleges, and universities give daily proof that women may receive to advantage the opportunities for the highest mental training which the land affords. Examination records and honour lists give ample evidence that they do not fall by the wayside nor lack in pluck and endurance, nor fail to secure their due share of laurels. Even in German universities, when accorded an opportunity, they carry off the doctor's honours with credit. With these achievements of American and English women in mind, some of the German women have been spurred on to follow and compete with American women in the higher intellectual callings. However, many are so bitterly opposed to the so-called *Emancipation der Frauen* that it is only by severest efforts that they are able to gain any ground at all. But, as Fräulein Lange says, what they need in settling the question is not logic, but experiment.

But with all the activities looking toward the higher education of women in other countries, espe-

cially in America, England, and Switzerland, it is becoming imperative that some just measure of recognition be taken of the women petitioners for advantages equal to those offered in other countries. Notwithstanding all that has been accomplished in this direction in America, many of the German opponents of the higher education of women will not admit that the results are desirable ones. Dr. Schöne wrote: "I believe we have no reason, if we observe America's school organization, to wish for the higher education of women. Moreover, to be continually placing America as a pattern is only possible when one has no knowledge of the conditions there, or will purposely misrepresent them. Further, thoroughly educated women we need, but learned women not. By a truly educated woman is to be understood one who is prepared in the household arts. A learned woman is of no use in that capacity."* Others look upon the conditions resulting from higher education of women in America as among the most desirable attainments, and regard America as a *Paradies der Frauen*. Dr. Emil Hausknecht, an opponent, says: "If we should insist on expecting of our girls the same amount of work we now require of the boys, the girls would be physically ruined under the enormous burden of work; hence the advocates of classical secondary schools for girls will fail in their endeavours." He has viewed the situation in America, and, although recognising at least partial success

* Neue Förderungen, in Zeitschrift für weibliche Bildung, 1895, p. 53.

in the system as developed under American conditions, he does not believe it could be applied successfully in Germany. He says: "Still it must be admitted that in a few of their colleges the Americans have surpassed us, and that they have happily avoided the dangerous rocks on which a higher scientific education for girls is so often wrecked—the dangers to health, diversions from the duties of domesticity, the disappearance of womanly grace, and the growth of the blue-stockings."* Upon what he bases his former sweeping statements is difficult to determine. The experiment has never been tried in Germany, and the results in other countries would not bear out his assumptions. It is simply the dogmatic reasoning that so many alarmists have indulged in. The European discussions remind us very strongly of the prophecies made by such men as Dr. Clarke in this country a generation ago. But, as Dr. Harris points out,† "Experience has not, however, confirmed the theory. The differences of mind, on the whole, when brought to bear on the subjects studied in college or university tend rather to help than to hinder the progress of both sexes. Each party gains something from the other's views, and, although the profit of higher study is not precisely the same for women as for men, there is ample profit for each. Hence coeducation in college work makes progress continually, and the higher education of women in

* Report of the Commissioner of Education, vol. i, 1892-'93, p. 532.

† Preface to *Higher Education of Women in Europe*, by Helene Lange, p. vi.

one of the two modes—in separate institutions or in coeducating ones—is become quite a matter of course.”

Dr. Hausknecht is obliged to admit that “the common opinion of physicians, educators, mothers, and all women who themselves received a college education in America, goes to confirm the statement that the health of girls in colleges specially intended for their sex is not only *not* endangered, but promoted by means of wise alternation between intellectual and frequent physical exercises, such as walking, cycling, gymnastics, swimming, bathing, rowing, etc. The condition of college girls is generally better than that of girls of equal age who remained at home.”* But feeling that he must make remonstrance, no matter how feeble, he maintains that “coeducation is possible, however, in America more than in Germany or elsewhere, because custom and education have given to the girl and the woman greater freedom and determination in their manners and appearance, and have also given them strong protection against encroachment and improprieties.”† Could we ask for a better testimonial of the benefits of the higher education of women or a more eloquent plea for its universal extension? The fact confirms the theory that were women given higher education, were coeducation the rule, and were more women teachers employed in the German schools, the respect and reverence for them would increase and elevate them to their rightful position.

* Bureau of Education Reports, vol. i, 1892-’93, p. 532.

† Ibid.

The present Empress, although opposed to "manishness" in woman, would not countenance idleness nor make woman simply an ornament or a drudge. She conceives matrimony as the natural destiny of woman.* She says: "My ideal is a wife who is man's complement, who strengthens him, who in the silent bosom of the family prepares him for life's severe struggles. I am opposed to women's activity in men's callings. I would permit women neither in the factory nor in business houses. In the school, in the hospitals and sick rooms, on the stage, in the concert halls, in the studio, there is her sphere of activity. Embroidery, fine needlework, all kinds of feminine industrial activity, find in me an enthusiastic admirer. However, may woman ever hold in mind that for her there is no more beautiful calling, no more noble destiny, than the holy and important duty—the foundation of every state—the moral and bodily education of the child. In my estimation, the mother of the Gracchi stands upon a higher plane than George Sand or Rosa Bonheur. It is my view that a woman fulfils her entire destiny only when she is a wife and an intelligent mother."

The Emperor is also very strongly opposed to bookish training and the over-intellectual development of women. He is reported as saying that women's interests should be completely absorbed in the "three K's"—*Kinder, Küche, und Kirche*.

The possibility, says Miss Lange, of having true mothers can come only when the development of

* Zeitschrift für weibliche Bildung, 1896, pp. 88, 89.

woman's character is no longer hindered, her intelligence chained and kept in darkness. The influence of the mother upon the first six years of a child's life is almost continuous, and hence we must logically conclude that any lack of mentality on the part of the mother must act as a web around the child which chains his whole being. To properly instruct children, or even to intelligently develop their senses, the average mothers are incapable. For the majority this knowledge must first be awakened; they must first learn "to have more interest in the soul of the child than for embroidered curtains." The influence of mothers on all great men has been immense, while the lack of it in criminals' mothers is sufficiently established.*

Miss Lange has made an eloquent appeal to secure some panacea to relieve the discontent of the modern girl. She is diametrically opposed to the views of conservative Germans, that the admission of women to higher spheres of activity will cause discontent. She has shown that "true happiness is to be found in work; there can be no leisure without toil; people who do nothing are unfruitful fig trees which cumber the soil." † Not only must women be allowed to work, but they must be helped and aided in their work the same as men are. Moreover, as no man is happy in a calling arbitrarily selected for him by some one else, so women "must have the right to choose according to their powers and talents.

* *Zeitschrift für weibliche Bildung*, 1896, p. 475.

† *Higher Education of Women in Europe*, p. 122, Klemm's translation.

Nobody chooses otherwise. Hence no field of labour should be denied, not even the highest intellectual labour. Those who intellectually hunger should be offered the best intellectual food available in Germany. No one in Germany should be denied opportunities to fill that inner desolate void, no one obliged to stifle what is considered the highest sign of superiority—a longing for serious mental and professional work. Yet this murder of the mind is committed daily in our country.”*

Fräulein Haecker, of Coblenz, conceives the “aim of the present women’s movement to be the highest and noblest thinkable, for that which we women really strive for is not simply the permission to enter this calling or that; not simply the guarantee of certain individual state or business privileges; it is the recognition of the highest rights of mankind—the rights of inner and outer personality—the rights of individuality.”†

* Higher Education of Women in Europe, p. 128, Klemm’s translation.

† Zeitschrift für weibliche Bildung, 1894, p. 362.

CHAPTER VI.

CONCLUSIONS.

IN this chapter I shall attempt to summarize briefly the most important features to which attention has been directed more in detail throughout the foregoing pages. The summary will be more critical than expository, and an attempt will be made to point out the most significant lessons—either for adaptation or avoidance—that the German system has for us. A consideration of the school organization, methods of examining teachers, qualifications of teachers, courses of study, education of women, etc., has revealed many striking differences between Germany's school system and our own. Their system certainly possesses many features divergent from America's; some of these features are highly commendable for all countries, others possess advantages for Germany only, while still others seem objectionable *per se*. To sift out and summarize these several features is the aim of this chapter.

1. *General Organization and Management.*—The entire system may be termed bureaucratic, for, although there is local representation and a certain degree of local option permitted, the initiative in all

movements and the balance of power rest with the state officials, who are virtually appointees of the ruling monarchs of each state. The cultus minister is a member of the king's cabinet. The king's decree in educational matters is supreme, and all appointments to official positions are indirectly in his power. Local autonomy is unknown. True, a certain degree of option is given to cities as to what type of school they will maintain by local taxation, but the state may establish whatever schools it sees fit and may support them from the public treasury. The general administration of the school, selection of teachers, fixing of courses of study, examination of pupils, etc., are all directly or indirectly in the hands of the central authority. The state may delegate to the city certain functions, but in order to secure *abiturienten* privileges for its students the city must conform to state regulations.

Methods of taxation and support need not detain us. Our system is probably adjusted to our democratic form of government as Germany's is to its monarchical institutions. Investigation of this department concerns state administration or sociology rather than pedagogy. Germany's method of selection of teachers is incompatible with our thorough faith in local autonomy. The more we can leave to local option the greater the interest created and the greater efforts toward self-education. Our system tends to produce individuals rather than types. Observation leads me to believe that a stronger feeling of interest concerning education is exhibited by parents in America, especially of the lower and middle

classes, than in Germany. There the interest is more concerned with the fulfilment of the law than with active personal relations.

Certain features of a professional character can be much more efficiently conducted by a central body than when left to local autonomy. Among these are the certification of teachers, preparation of courses of study, etc. But with these, as with all matters delegated to the state, the more satisfactory and no less efficient manner, at least for a democratic country, is to have a representative body rather than one centrally appointed. To a certain extent we have imitated Germany in the state certification of teachers and in prescribing uniform state courses of study. We might with great advantage to our educational system carry out the scheme *in toto*. Not only should each State examine and certificate all its teachers by some uniform method, but a given certificate in one State ought to be recognised at its face value in all the States. It would seem also a great advantage were the high-school graduates' diplomas, like the *Reifezeugniss*, recognised in all sections, without consideration of State boundaries. In Germany all universities require the same qualifications for entrance. A boy educated in a Prussian gymnasium or real-school can move to Saxony and enter a university there as well as one in Prussia. We all know the condition in the United States. It is gratifying that our A. B. degrees are almost everywhere accepted for entrance upon graduate study. The university courses are more and more being planned with some idea of general equivalence; why may we

not extend this to the high schools and to college-entrance requirements? The unqualified success in Germany certainly affords a strong plea. It is imperative for the welfare of education that we attain greater unity of aim in education. This can only be done satisfactorily by the greater centralization of the purely pedagogical and professional administration of education. The universities act as a great unifying agent in education, but their influence is largely hortatory. We need more binding legislation on the part of the States, and some, at least, advisory body representing the different States, that will tend to unify educational matters. In the influence of the *Regierungs Kommission* we have a good example of the efficiency of such a body.

2. *Position of the Secondary Schools in the System.*—The secondary schools, like those of England, form a class in almost no respect continuous with the common schools, which in all countries do and *must* contain the bulk of the school population. The people's schools and the secondary schools overlap in several years of their courses. But although this is true, the division of the work is such that a boy from the people's school must begin near the foot of the ladder again if he attempts a course in the secondary schools. The masses are debarred by the higher tuition from participating in the benefits of the secondary schools which they are taxed to support. The system apparently works without much friction in European countries, but in a country founded upon and steeped with democratic principles the system would be untenable. Even in

Germany there is not entire satisfaction with the arrangement. The later reform movements indicate that the people at least wish to secure some form of instruction common to all the lower classes (*Einheitsschulen*), which will enable all to pursue a higher course subsequently if pecuniary conditions permit. None wish to be excluded because of the lack of continuity of the school courses. (See Frankfort plan, etc.)

The European system is distinctly a class system, and in my opinion it militates directly against the lower classes. Only those possessed of at least moderate means can hope to secure the benefits of higher education. The poor boy can never know whether he has in him the requisites for scholarship. Newsboys, bootblacks, match venders, stable-boys, farmer boys, and canal-boat boys can never hope to rise above their station. They will never be numbered among the college professors or among statesmen. Our own country can point to hundreds of scholars and men of distinction in the various vocations who, had they been born under and remained under the German flag, would have gone down to their graves unremembered.

The more we can do to strengthen the continuity between primary and secondary schools, between secondary and higher schools, the greater will be the strength of our educational system. The secondary schools must be a fitting continuation of the primary schools, and a natural road to higher education and for life's duties. By extending the benefits of education to all alike, as we are largely doing, we need

not be troubled with Germany's hallucinations of a land filled with "hunger candidates," the result of over-education.

We should seek through education to elevate work, not to raise men by education above work. How to adjust education to accomplish this better is a pertinent question, but one beyond the province of this work to enter upon. The solution, most assuredly, is not in withholding higher education from any who desire it. Such a system crushes out all personal ambitions and aspirations of the lower classes.

3. *Classical and realistic instruction in entirely separate institutions* offer certain advantages. The energies of the school are not dissipated in too diverse directions, and the result is that the highest type of work is accomplished in the class represented. There are some disadvantages, especially in smaller cities that can afford only one type of school. This would be avoided in a large measure by the *Einheits-schule* affording common instruction later, and hence enabling pupils to remain longer at home before removing to another place to complete the desired course. Our own high schools suffer from a too great dissipation of energy in attempting to offer too many varieties of instruction. Similarly to the new Frankfort plan, we need to offer a concentrated course extended as late as possible, rather than to induce too early specialization. The function of the schools is to prepare men and women, not specialists, tradesmen, nor candidates for a particular college. The schools have no right to assume the

classics as the chief end to be attained, nor is it their sphere to assume that the realities make up the sum of life. The preparation for life is the business of the schools, and whatever best subserves that purpose should be sought. Specialization, according to biological and psychological laws, should be later acquisitions. Entire devotion to the classics or to the realistic studies undoubtedly is a form of specialization. Waste of energies from attempting too many lines of work, it is true, should be avoided. We need *concentration*, and prolonged concentration upon all lines attempted, but *not specialization*, nor exclusion of all except one given line of work.

4. *Concentration in Studies.*—We have seen that the German plan is to make some *group* of studies the core of all the work in a given course. In the humanistic gymnasium the classics form the core, while in the realistic institutions studies in Nature and mathematics receive the stress of work. The multiplicity of subjects and the dissipation of energy in American schools are well known. Pupils dabble in this and dabble in that, taste here and taste there; they flit about from subject to subject without a real appreciation or understanding of any. In nearly all subjects attempted in Germany the course is continuous throughout the entire school life.

I believe that the arrangement of the courses of study in American schools forms one of the most pressing and important problems for our consideration. The making of a course of study means more than finding a place on the school programme where all apparently necessary and desirable branches of

human learning shall be represented ; also more than a distribution of subjects in such a way as to avoid conflicts. The curriculum as a whole and the programme in detail should be so planned as to have each subject presented at the period most adapted to the psychical development of pupils. Unfortunately, the purely external practical considerations usually take precedence over the psychological.

The "final test by which to judge any plan of culture," says Spencer, "is, Does it create a pleasurable excitement in the pupils?" True intellectual interest is more than mere transient pleasurable emotion in that which is novel or striking. It is dependent upon one's knowledge. Both the amount of knowledge upon a given subject and the relation it is made to assume toward other knowledge affects one's interests in the subject. Now, studies that occupy the attention of the learner for a short period only are consequently viewed in only one general aspect, and necessarily fail to produce deep or lasting interest in them. For the arousal of permanent interests in a subject, it must be looked at in diverse relations. This means that it must come before the learner at different periods of his life, when he has new data with which to link it, and when his stages of development make it possible to use the subject as an aid in bringing to complete maturity the awakening instincts. Each phase of every subject should be presented when the "nascent periods" of interest in the different phases appear. "The great thing in all pedagogy," says James, "is to strike when the iron is hot."

To present the philosophy of history and grammatical abstractions when the child is in the nascent period of concrete illustrations is to proceed counter to all psychological laws. And when studies are pursued for a limited time only, all phases must be presented at one time, if presented at all; hence many phases are very inopportune.

When a study is pursued for a single term, or a year at most, and never reverted to, as is the case with the majority of studies in our high schools, the newly acquired knowledge has little chance of becoming an integral part of the unity of mental possessions. It is acquired as an isolated set of facts, and all that does not "evaporate" remains largely isolated through life. Although all pedagogues will quote glibly the statement that discipline and training are of paramount importance, and the knowledge of facts of secondary importance, yet how many make any attempts, or even realize that an attempt is necessary, to provide proper conditions for real training? It is usually lost sight of that discipline of mind comes through acquiring and retaining knowledge, and that these processes are dependent upon the proper grouping of knowledge. It is not alone the few facts which are logically or objectively connected with a given fact, but the whole mental content, that determines how new materials shall be assimilated and retained. This necessitates a consideration of the relation of all the parts of the curriculum to each other and to the whole.

In the arrangement of our courses of study we have been guided almost entirely by merely practical

considerations. There has been altogether too little psychological and pedagogical perspective. To have pupils finish all the prescribed studies in a given course has been the main desideratum. Whether the knowledge of those subjects should be abiding, and whether those studies should furnish real mental grasp and ability, have been rather secondary considerations. The pupils often pursue their subject units with little else in mind than the "finishing" of the subject. Ask most high-school graduates whether they have had history or physics, etc., and they will tell you, "Yes, we 'finished' that" at such a time. And because of the brevity of time through which the subject was pursued and the single view which they have obtained, they frequently neither know nor care whether there is more beyond. Interests that have germinated have become dormant from lack of exercise, or because they have been choked out by the plethora of new and unrelated materials forced upon them. The American boy at the close of his high-school career has seldom tasted that inspiration which comes from deep and unified knowledge, and which leads to the contemplation of infinite possibilities. He is more apt to be dissatisfied, which is a natural result from the contemplation of his own sense of completeness.

It is a hopeful sign that our universities have been so thoroughly impregnated with the German ideas of continuity and correlation. Their curricula are being arranged upon a more psychological basis. Now, all great educational movements begin in the higher institutions and work toward the lower. The

law may be termed that of "descending radiation." According to this, the diffusion of German ideals in education must soon permeate the high schools and grammar schools.

The Report of the Committee of Ten on Secondary Schools advocated many of the views which I have maintained. The Report of the Committee of Fifteen also advised the earlier introduction of some of the secondary-school studies and the continuation of nearly all studies through a much longer time. More recently the Committee of Seven on History Teaching have re-emphasized very strongly the plea for greater continuity in education. Many writers are independently asserting the necessity for prolonged continuous effort in some lines of work, so as to give the pupils a sense of mastery. It is only thus that they can be brought to self-realization and independence. Professor Hanus, in a recent work, says that through the pursuit of "dominant groups of ideas the organization of his knowledge and thorough achievement are natural and inevitable. Without them, desultory effort, sporadic exertion, half achievement are sure to determine the nature and quality of his work. The intellectual flabbiness and uncertainty, the want of enthusiasm and pleasure in knowledge and the pursuit of knowledge, too often shown by many a high-school pupil and by too many high-school graduates, illustrate what is meant. . . . Further, intensiveness and continuity in the pursuit of individual subjects beyond their barest rudiments, and of activities beyond their beginnings, are essential to the development of power.

Such intensiveness and continuity only can determine whether a pupil has a real or merely a transitory or illusory interest in given subjects.”*

One of the greatest of living educators has said : “ Only great, concentrated, and prolonged efforts in one direction really train the mind, because only they train the will beneath it. Many little, heterogeneous efforts of different sorts, as some one has said in substance, leave the mind like a piece of well-used blotting paper, and the will like a rubber band stretched to flaccidity around one after another bundle of objects too large for it to clasp into unity. ‘ In der Beschränkung zeigt sich der Meister.’ All-sidedness through one-sidedness. The unity of almost any even ideal purpose is better than none, if it tends to check the superficial one of learning to repeat again or of boxing the whole compass of sciences and liberal arts, as so many of our high schools and colleges attempt.”†

5. *Teachers' Training.*—Germany's teaching force has manifest superiority over ours in certain respects. The thorough training that all must secure before entrance upon their duties insures advantages apparent to all. From the standpoint of mere subject teaching thoroughly equipped teachers can better and more quickly impart knowledge. Thus pupils are enabled to master a greater range of knowledge in less time and also to gain a firmer grasp of all attempted. More than that, it is the added insight,

* Educational Aims and Values, 1899, p. 37.

† Dr. G. Stanley Hall, Moral Education and Will Training, Ped. Sem., vol. ii, p. 88.

enabling a more accurate estimate of everything at its right value, which places the trained teacher above the unskilled novice. Then the moral stamina which such teachers can infuse is of inestimable value.

Means of Training.—The methods in vogue in Germany for training secondary teachers offer many points of comparison and interest for the solution of this vital problem in America. The plan followed there is entirely different from anything that we have attempted. The plan, as has been shown in detail, is (*a*) at least three years of university study; (*b*) prolonged study of the special branches the candidate expects to teach as a prerequisite to examination; (*c*) philosophy, psychology, and pedagogy must be one group of examination subjects; (*d*) the *seminar* or professional year is required, which includes study, practice, criticism; (*e*) the trial year is required under conditions as near as possible to actual future conditions.

The general end to be attained is one which we need to make strenuous efforts to secure. The great lack of professional equipment has long been one of the vulnerable points in our system. We have had either teachers with academic preparation but wholly lacking in professional training, and during the first years of their work without definiteness of aim, and perchance through their whole career without philosophical balance; or teachers with so-called professional preparation without proper academic knowledge of their subjects. Professional training can only properly follow thorough academic study. This

is Germany's plan. A new era, however, is in sight in America, though not fully inaugurated, which will demand for the high schools adequately prepared teachers. The movement, like all great educational movements, began at the top, and is proceeding downward; that is, the universities have demanded better prepared students, which could only be met by an invigoration of the teaching force where university students are prepared. Then, again, the supply of college-trained teachers is increasing so rapidly that competition is driving the unfit to the wall.

The new movement to supply the deficiencies in the strictly professional preparation of secondary teachers and superintendents in some respects resembles the German plan, though in other respects there is a radical difference. I have reference to the schools of education or schools of pedagogy * being rapidly established in universities. Both the graduate and the undergraduate departments of these schools have important functions. Such schools possess important advantages over training schools isolated from universities. The chief feature is that students are in contact with high scholarship, adequate libraries and appliances, and are apt to imbibe aspirations for breadth of learning, and not to fall, into mere so-called *professionalism*. The system presents certain features superior to the German plan. The consideration of educational history,

* For an outline of the earlier part of this new movement see The Professional Preparation of Secondary Teachers in the United States, Dr. F. W. Atkinson, Dissertation, Leipzig, 1893.

philosophy, theory and its application, go hand in hand. In Germany courses in systems of philosophy, psychology, and in educational history are given in the universities. But courses in current educational problems, application of psychology to education, child study, foreign educational systems, etc., are wholly lacking. These subjects can be more profitably presented by university professors who have the scholarship, time, and libraries than by gymnasial instructors. We have not developed practice schools or model schools to any extent in the university schools of education, nor have we the *Probejahr*. The functions of our new university training schools are thought to be to lay the foundations of education, to consider the broad principles of education, to teach educational philosophy, and not to spend the time in practising *devices*.

6. As tentative *suggestions* the following are offered as an outline of *minimum requirements* that should be made of all candidates for secondary-school positions:

A. Teachers should have received a full university or collegiate course, including (or in addition to it) at least *one year of professional study*, to embrace (a) physiology, (b) psychology, (c) educational history and theory, (d) philosophy.

A state certificate may be secured by examination, but at least two years of collegiate training should be one prerequisite therefor. Not only ability to answer examination questions is necessary, but acquaintance with men, apparatus, libraries, and appliances is indispensable. The "self-made" man is only half

made. The book learning he may have acquired, but the no less important factors are apt to be lacking.

B. Principals and superintendents, both city and country, should have a full collegiate course plus, at least, one year of professional study.

This would relegate to the normal schools the function of preparing teachers for the primary and grammar schools, which is all they can hope to do in time to come. In these each student ought to take one line of intensive work (in connection with the professional), so that graduates would be not merely teachers, but *teachers of something*. While the man, the woman, is above the subject, yet there need be no sacrifice of character in preparing for a definite thing. The character will then be enabled to assert itself all the more strongly.

7. Teachers' Examinations.—The method of examination of teachers in Germany insures a fair test of each candidate's powers. No mere memorizing and cramming for a set of questions to be answered at one sitting will suffice. The plan of prescribing a thesis to be prepared in a given time is similar to that followed in universities where a thesis in the major study is exacted of all aspirants for degrees. The teaching candidate is given a month to demonstrate whether he knows how to use knowledge, how to use books and libraries, and to show whether he can assimilate, interpret, and expound data which he collects. In certain cases the doctorate dissertation is accepted in place of a separate essay. This is a very commendable feature. The oral examination of candidates singly gives a chance for the ex-

aminers to estimate capability in diverse ways not limited to the questions on the subject-matter. Examiners acquire a personal knowledge of each candidate during the various stages of the examination, which is invaluable. Lastly, the demonstration of actual teaching skill in conducting a class before the examiners, which, although not so important, is of additional value in gaining a personal acquaintance with the candidate. I believe we might to great advantage adopt almost every feature of their plan of examination. Its thoroughness and rationality and its restriction to a few subjects make it far surpass the methods commonly in vogue in this country. By the solely written test no personal acquaintance of the teacher is acquired. Knowledge as shown in the power of writing examinations is by no means the most vital feature to be inquired into in admitting to the teaching profession. What we need to look for as well are sterling character, personal magnetism, breadth of culture, and professional bearing. These can be better determined by a thesis which requires time, patience, perseverance, and breadth of reading and by an oral examination which exhibits the candidate's strength or points of vulnerability, mode of attacking questions, and manner of oral expression, all of which are important considerations. By the acceptance of college and normal-school diplomas we virtually recognise this as a superior method. Candidates who have been long under the personal tutelage of trusted authorities, and who have had long courses of instruction, may be considered as having passed through

long periods of examination of which there is no equivalent. Those who show their strength and powers of endurance are admitted to certain privileges without further formal examination. Such procedure ought to be a guarantee that the psychological and pedagogical attainments have been reached. Baccalaureates who intend eventually to become barristers, clergymen, or prescribers of pills and boluses, and who have never studied a pedagogical or psychological principle, ought not to be allowed to enter the ranks of teachers without first making adequate preparation. Those who are neither born nor made for the profession should be excluded therefrom.

8. *Departmental Teachers.*—Except in the lower grades department teaching is the rule in Germany. There is not, of course, the rigorous division of subjects that there is in a university. But no teacher, as was shown in the subject of Teachers' Examinations, has more than one group of closely allied subjects. The higher the grade of pupils a teacher instructs the smaller the range of subjects required and the greater the depth of knowledge demanded in the few. The great objection made against the system is the anticipated lack of definite moral training afforded to pupils. While there is validity in the objection, especially for lower grades, yet the difficulties may undoubtedly be overcome by judicious grouping of subjects and wise supervision. The objections grow less with advancing grades and the advantages multiply. In this country there is some difficulty in securing properly qualified special

teachers because of small salaries. Here the "teachers are fewer, and must divide their time among several subjects; in such cases the first step is to employ teachers with a good all-round training, with some extended preparation on each subject they undertake, in preference to those who have a smattering of many subjects." *

This difficulty does not appear in Germany, since the Government regulates the salaries, and schools in small cities secure equally as good teachers as the larger ones. The advantages that are secured by receiving instruction from a master, an authority rather than a mere echoist, are so apparent to a professional eye that it would seem unnecessary to reiterate them. Yet school boards, and even some superintendents, exhibit a woeful lack of appreciation of the fact. In Germany, teachers are encouraged and even required to keep up with the progress of their subjects. There, teachers as well as university men must do original investigation if they would not fall behind in the race. The yearly scientific dissertation sent out by some member of the faculty of each secondary school is an example of what is accomplished. This specialization insures a class of teachers who are not only masters, but authorities; it raises them above all servility to text-book teaching. They teach better, waste less time, better sift out

* Report of the Committee (of Ten) on Secondary School Studies, 1893, p. 187. This committee dealt with the school side of the question. I have endeavoured to show how a reform in examinations requiring fewer subjects and more extended research would remedy some of these evils. (See topic Teachers.)

the unessentials, give greater inspiration, and better scholarship is the natural result. There is no apparent disciplinary loss—in fact, the greatly increased interest aroused is the initial impulse to greater persistence. Hence, will power is augmented. It has been said that “above all, the teacher must keep up with the times in books, methods, lines of thought, and interest. . . . She must realize that the world is always passing on, and that, like Alice in Wonderland, she must run as fast as she can to keep where she is. . . . She must keep herself in connection with the great teachers of her time.”*

This is the especial need of keeping up in one's special line of teaching. It is impossible to be “Jack of all trades” and master of any one. Let us hope for a Germanizing in this respect. The opportunities for securing adequately trained teachers are such that every good high school should be properly equipped. The supply of candidates is now, or soon will be, such that no school board need put up with incompetent teachers. The need of specially trained teachers is not confined to the high schools. The Committee of Ten have pointed out that “many teachers are too unskilled to present in the elementary schools the beginnings of geometry, science, history, or literature, and that the failures in this work are due to the mechanical efforts of those who have had no higher or special training.”†

* Quoted in Report of Commission on Secondary School Studies, p. 186.

† See Bureau of Educational Reports, vol. ii, 1892-'93, p. 1476.

9. *The amount of work given German pupils* is simply enormous. They have at least ten hours a week more work than corresponding classes in our schools. It would seem unwise to attempt to imitate in this respect. There is little doubt that in our climate serious consequences would result. Even in Germany the cry of *überürdung* (overloading) has gone up from all parts of the empire. Many believe that in the boys' higher schools pupils are being overburdened with work during school hours, still more weighed down with obligatory home work, and occasionally by the voluntary work which the pupils do for the sake of praise. In many cases the work reaches as high as eleven hours of *obligatory* school duties—something that mature men can not stand if continuously kept up. The pupils do not secure sufficient sleep, nervousness sets in, weak, spectacled eyes become more common, and all forms of chronic diseases are said to be more frequent among pupils of the secondary schools than among pupils of the burgher schools, where less is exacted of the pupils.*

It has been said that English boys are two years behind the French at eighteen, but at twenty-five they have outstripped them. This is attributed to the overcrowding of the French boys during their adolescent years, and the comparative freedom from mental overstimulation of the English boys. The great devotion to all sorts of sports requiring bodily activity in the open air, together with the immunity from mental overexertion, gives to the English boy,

* Zeitschrift für Schulgesundheitspflege, Nos. 11, 12, 1897.

although less precocity at eighteen, a vigour of mind and body and staying qualities which insure his being a winner in the race.

Better than to increase the quantity of work, an improvement of quality is most desirable in American high schools. The time above seven or eight hours' close mental application would be better spent in athletics and the manual arts. An increase above this amount of intellectual application in adolescents is suicidal to the race. Some writers who have made close investigation of the subject claim that the mental ability of German youth is decreasing and that the results will be disastrous to future generations.* Let us take due warning. It would seem as though the fact that we can not preserve sound minds in unhealthy bodies is completely demonstrated by physiology and psychology. Its reiteration seems a mere platitude. Yet how persistently is it disregarded!

10. *Sex of Teachers*.—The great predominance of men teachers in the upper grades is undoubtedly one of the strong features of the German instructional force. The men make it a life work, and there is none of the "temporariness" usually incident to woman's teaching. Then, undoubtedly, during adolescence the firm and strong hand of man is necessary to guide the restless youth aright. Women are by nature too emotional and vacillating to have entire guidance during this critical period. Best of all, many of the men are fathers of families, and they

* Zeitschrift für Schulgesundheitspflege, Nos. 11, 12, 1897.

have that necessary knowledge of and sympathy with adolescence to care judiciously for those intrusted to them. A teacher who is a parent is the best of counsellors. No young men or women are comparable. To me this seemed one of the most admirable features of the entire system. There is no injudicious impulsiveness usual with young men, nor the weakness, capriciousness, and sentimentalism apt to be exhibited by young women. Older men exhibit calmness, deliberation, firmness, yet fatherly consideration.

On the other hand, the lack of women in the primary grades and girls' schools is a defect in the system. Women are the natural teachers of children. What little lad or lassie would look instinctively for sympathy and love from a bearded and grizzled old man? They need the gentle tones and tenderness that only a sympathetic woman can bestow upon them. Most little children know intimately among grown people only their mother, and how can it be expected that a strange man—the proverbial schoolmaster most of all—will win their love and confidence? Without their confidence how can they be taught the highest and noblest lessons of life? By all means have the loving hand of woman to guide the tender years of childhood.

Dr. W. T. Harris says of woman's fitness for teaching, that "her natural endowments of versatility and alertness of mind fit her in a peculiar sense for the sphere of teacher of children. Their arbitrariness and caprice can be best watched and foiled by her. Their feeble strength demands intermittence

and periodicity, and their training must, above all, be gentle."* When children become older and feel the restlessness and impatience of youth upon them, give them over, at least in part, to those whose strength they will look upon with respect and admiration. Even here woman's presence has a desirable influence, and she should not be excluded therefrom. In my opinion were there at least a small percentage of women in the higher schools of Germany there would be a distinct gain. It would manifest itself in causing a higher and more wholesome respect for woman, which would add much to German life. The defect is the most deplorable in the lower schools. If boys have not learned to appreciate woman at her just value before they reach the higher grades, it is a difficult matter to alter their opinions. And certainly women ought to be employed in part in teaching girls.

"A man can not have as clear a comprehension of the nature of girls as a woman, a representative of the same sex, undoubtedly has. He is more apt to make mistakes in treating them. Furthermore, in things essentially feminine in the education of girls, such as fostering the sense of order, punctuality, cleanliness, graceful carriage of the body, propriety, and good manners, he can not nearly so well give advice and exercise supervision as a female teacher, with whom these things are matters of course. . . . To employ young unmarried male teachers in classes full of budding girls growing into maturity is objec-

* Report of Bureau of Education, vol. ii, 1891-'92, p. 812.

tionable from a pedagogical and even a moral point of view. . . . Older teachers are often lacking in that vivacity in instruction which girls need often in a greater degree than boys and youths." *

11. *The separation of the sexes* is complete in all the schools of Germany excepting some of the primary classes. The advisability of this is a large question, but by no means a settled one. Many arguments may be advanced *pro* and *con*. Germany feels that she has the proper solution, while in America, with an opposite answer, we feel for the most part satisfied. From the standpoint of discipline there seems some advantage in separating the sexes. Certainly discipline in German schools is most perfect, and the separation of the sexes seems to have contributed in some measure to this end. There can be no valid reasons on the score of incapability for excluding girls from the pursuance of the same studies as boys pursue. They have demonstrated repeatedly their perfect ability to master as severe mental tasks as boys. Candour would compel a majority of teachers in schools and colleges to admit that girls are among the best students. That girls and women sometimes break down while pursuing severe courses of study is no argument for their inferiority or incapability either mentally or physically. The real cause is stupidly overlooked. Custom and Dame Fashion prescribe that girls should take no exercise, must dress unhygienically, and thus impair

* Helene Lange, *Higher Education of Women in Europe*, translated by L. R. Klemm, p. 163.

if not ruin their health. Give girls the same chance for their physical well-being, and they will not evince any more signs of nervous breakdown than their brothers.

With reference to the moral effect upon the school, the words of Jean Paul Richter (Levana) seem pregnant with truth: "To insure modesty, I would advise the education of the sexes together; for two boys will preserve twelve girls, or two girls twelve boys, innocent amid winks, jokes, and improprieties, merely by that instinctive sense which is the forerunner of natural modesty. But I will guarantee nothing in a school where girls are alone together, and still less where boys are." Dr. Harris writes of his large experience in the St. Louis schools when coeducation was introduced: "Discipline has improved continually with the adoption of mixed schools; . . . the rudeness and abandon which prevails among boys when separate at once gives place to self-restraint in the presence of girls. The prurient sentimentality engendered by educating girls apart from boys . . . disappears almost entirely in mixed schools. In its place a quiet self-possession reigns; the consequence of this is a milder form of discipline. Boys and girls, originating according to Nature's plan, in the same family as brothers and sisters, their culture should be together, so that the social instincts may be saved from abnormal, diseased action. The natural dependence of each individual upon all the rest in society should not be hindered by isolating one sex from another during the most formative stages of growth. . . . Intellectual

development is far more sound and healthy.”* He further writes, “I had noticed that the atmosphere of mixed schools was desexualized, where that of separate schools seemed to have a tendency to develop sexual tension.”† Dr. E. E. White writes in the same symposium, “The fact that there is sex in the mind does not necessitate sex in courses of study and instruction.” Dr. James McAllister’s conviction is that “boys and girls can be taught to better advantage in every way together.” We might multiply opinions of prominent educators and physicians who have actually witnessed both phases of the experiment, and who are unanimous in their declarations of the feasibility and advisability of coeducation. Germany would perhaps gain nothing from the standpoint of intellectual instruction nor from mechanical discipline by adopting coeducation. But there is little question that the whole social position of woman would begin to appear in a new light. Woman would be seen at her true value, and greater respect and affection for woman would be exhibited in the coming generations. We have no reason to abandon our growing sentiment of appreciation for coeducation for the conservatism of Germany.

12. *Higher Education of Women.*—We in this country are not confronted with the immediate question whether women will receive higher education. The women of this country have settled it, for a time at least, in the affirmative. The ultimate

* Report of Bureau of Education, vol. ii, 1891-'92, p. 807.

† Ibid., p. 806.

question of whether this is the correct solution is still a debatable one. Shall we lend our aid and encouragement, or shall we take our stand with the conservative element of Germany? The question is one of far-reaching importance. The results will be judged in the future more wisely than now. Great tact is needed in dealing with it. Its solution will affect all future civilization. Will the higher education of women ultimately advance or retard the best and highest interests of mankind? What will be the effects mentally, morally, physically, upon woman and upon the race? It is beyond my province to enter into an exhaustive discussion of the subject. The question, it seems to me, is a biologico-anthropological one, and I leave the discussion to the expounders of those sciences.

However, I may set forth a few tentative opinions that appear warrantable in the light of present knowledge. The question has only just begun to be freed from mere passing sentiment. When logic has been applied, the past, the usual, the customary has been taken as the major premise, with the result of finding the new to be untenable. "The unusual appears absurd." The subject involves several aspects, a part of which may be indicated in the following questions: (*a*) What is the result to woman's health? (*b*) Does the acquisition of a higher education subject her to such strain that woman will be less capable of bearing and rearing healthy children? (*c*) Does it produce aversion toward marriage and the duties of motherhood? (*d*) Does higher education unfit her for household duties, which from the

nature of the case must fall to her? (e) Does higher education tend to take away that peculiar charm of femininity, usually termed "womanliness," which has undoubtedly been potent in producing the highest and noblest types of sentiment? (f) Will women become more masculine, and thus those finer shades of sympathy, love, compassion, altruism—all of which are conserved in the race through woman's influence—become displaced by the grosser characteristics which belong to masculinity?

The last two questions can not be answered in the present; only long time can demonstrate the answer. However, in the light of the present and from our knowledge of the development of the sentiments, we can hardly conceive of danger from this source. In discussing the effect of the study and practice of medicine upon woman, which was looked upon as the *ultimatissimum* of desexualizing occupations, we may quote Miss Lange's opinion concerning English women physicians. According to her, experience shows that the womanliness of women physicians is in no danger. Not only has woman preserved unsullied her womanliness, but, "more than that, the womanliness of a great number of patients is spared."*

13. *From the standpoint of health* I believe there is nothing to fear from the higher education of women. Considered in the light of all available statistics, few unfavourable results are directly traceable to this cause. Careful investigations have been

* Higher Education of Women in Europe, p. 47.

carried out by inquiry concerning the health of women college graduates. The most exhaustive, perhaps, was that instituted by a committee of the Association of Collegiate Alumnae concerning the health of female college graduates.* From this report the statement comes that "the facts which we have presented would seem to warrant the assertion, as the legitimate conclusion to be drawn from a careful study of the tables, that the seeking of a college education on the part of a woman does not in itself necessarily entail a loss of health or serious impairment of the vital forces. Indeed, the tables show this so conclusively that there is little need, were it within our province, for extended discussion of the subject." Further: "It is sufficient to say that the female graduates of our colleges and universities do not seem to show, as the result of their college studies and duties, any marked difference in general health from the average health likely to be reported by an equal number of women engaged in other kinds of work, or, in fact, of women generally without regard to occupation followed."

From the same source it is shown that maternity is equally as common, and infant mortality as low, among women college graduates as among other women of the same social strata. If the number of children among the higher classes is smaller than in the working classes, it is not necessarily due to sterility. The cause may be attributable to perverted notions incident to the social demands made

* See report under this title, 1885, pp. 77, 78.

upon society women; or the proper regard for the economical and educational possibilities may limit the size of a family. Quality, and not quantity, is most desirable.

Dr. Helen P. Kennedy has made a valuable contribution to the medical aspect of the question in her study of "The Effects of High-School Work upon Girls during Adolescence."* She maintains that "great intellectual demands are made upon young girls at the time Nature is developing the female organism. The whole nature of the girl at puberty is undergoing a change that will fit her for motherhood. . . . If the present system of education interferes with this process, then a better system should be devised. If the system as it is inflicts no harm, then we must look to other causes for the existing ill health of American girls. Till we know the present state of health of schoolgirls we can not be sure that the educational system is at fault, and therefore can not demand its improvement."

From her thorough study of one hundred and twenty-five cases she finds an improvement in forty-eight per cent of the girls during their high-school course, twenty-six per cent noticed no change, and only thirteen per cent were aware of any increased unfavourable symptoms. To her mind there was "clear evidence that the girls were graduated from the high school in an improved physical and mental condition rather than the reverse." Neither were the girls "stunted in physical development, being

* Pedagogical Seminary, vol. iii, 1894-'95.

normal in height and well proportioned in other respects." Alarmists are prone, as I have elsewhere indicated, to call for application of the knife at the wrong source. Schools are charged with endangering the health of children when the real source of evil is in the home.*

14. *Effect on Home Life.*—It is only those who have warped opinions concerning true housewifery who look askance upon intellectuality in a wife or mother. They have advanced little beyond the seventeenth-century ideas in which the lower classes of women were regarded as drudges and the higher as ornaments; intellectual culture was considered as either useless or dangerous. I believe that affection for and devotion toward woman has been greatly increased by her conquests and victories in the various departments of art and science that she has entered. Concerning the genesis of love, Spencer says: "Egoistic pleasures of all kinds are doubled by another's sympathetic participation, and the pleasures of another are added to the egoistic pleas-

* My purpose is not to minimize the evils due to unhygienic conditions under which pupils work in schools. The grossest ignorance of school-room hygiene, hygiene of work, hygiene of the body and mind, are frequently exhibited by teachers who should know better. Schoolhouses are also frequently almost criminally constructed, and pupils are sometimes shamefully overworked, though I do not think the last is general in America. My aim is to show the need of proper diagnosis of situations. Teachers are in a measure responsible for not causing necessary knowledge to reach down more among the masses. If home pedagogy is a crying necessity, but its right to exist must be first demonstrated by those who stand in high places.

ures.”* How can “sympathetic participation” be engendered save through knowledge of common interests? Added to the purely physical elements of love “there is the sentiment of admiration, respect, or reverence; in itself one of considerable power, and which in this relation becomes in a high degree active.”†

“I would protest against the superstition that the housewife and the scientifically educated woman are incongruities which threaten to rend German life in twain. For the wife who does not understand the great interests of her husband is not able to foster and increase his idealism, which disdains material for higher gains; she will, on the contrary, endeavour to drag him down to her own level.”‡

* Principles of Psychology, vol. i, p. 488.

† Ibid.

‡ Higher Education of Women in Europe, p. 157.

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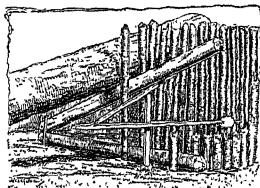
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